41ST CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 307.

MINTS, ASSAY OFFICES, AND COINAGE.

LETTER

FROM THE

SECRETARY OF THE TREASURY

TO THE

SPEAKER OF THE HOUSE OF REPRESENTATIVES

COMMUNICATING

A REPORT OF JOHN JAY KNOX, DEPUTY COMPTROLLER OF THE CURRENCY, GIVING THE CORRESPONDENCE OF THE DEPARTMENT RELATIVE TO THE REVISION OF THE MINT AND COINAGE LAWS OF THE UNITED STATES.

JUNE 29, 1870.—Referred to the Committee on Coinage, Weights, and Measures, and ordered to be printed.

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CORRESPONDENCE.

The Secretary of the Treasury to the House of Representatives.

TREASURY DEPARTMENT, *June* 25, 1870.

SIR: I have the honor to acknowledge the receipt of a resolution of the House of Representatives, under date of the 4th instant, directing the Secretary of the Treasury "to furnish this House copies of all correspondence between the department and officers of the different mints and assay offices, and other persons, touching a bill and report submitted April 25, 1870, by the Secretary of the Treasury to the Finance Committee of the Senate, to revise the law relative to the mints, assay offices, and coinage of the United States."

I inclose herewith a communication from the Deputy Comptroller of the Currency, transmitting, as far as practicable, copies of the correspondence called for by the resolution.

I have the honor to be, very respectfully,

GEO. S. BOUTWELL,
Secretary of the Treasury.

Hon. J. G. BLAINE,
Speaker of the House of Representatives.

TREASURY DEPARTMENT, OFFICE OF THE
COMPTROLLER OF THE CURRENCY,
Washington, June 25, 1870.

SIR: I inclose herewith, in accordance with the resolution of the House of Representatives of the 4th instant, copies of the correspondence of the department in reference to the bill revising the mint and coinage laws of the United States, which bill, with an accompanying report, was transmitted to the chairman of the Finance Committee of the Senate and the Speaker of the House of Representatives on the 25th of April, last.

In the month of December last, in accordance with your request, a rough draught of a bill was prepared, which contained in a concise form nearly all of the legislation now in force upon these subjects. This was printed, interspersed with interrogations and additional sections, for the purpose of calling forth an expression of opinion from those persons who were known to be intelligent upon such subjects. The correspondence herewith inclosed, dated prior to April 25, much of which was informal and unofficial, contains various criticisms upon the rough draught of the bill referred to. The notes of different officers of the Treasury Department, of gentlemen in San Francisco and other parts of the country, were written upon printed copies of this bill and returned in that form. These memoranda, which were carefully considered and in many cases adopted, it is impracticable to furnish in an intelligent manner without also transmitting copies of the bill itself. The remainder of the cor-

respondence is, however, so comprehensive that it is not considered necessary to transmit a copy of the bill first prepared. The notes of Robert Patterson, whose name has been familiar to all persons connected with the Mint at Philadelphia almost from its foundation, and who was himself connected with that institution for more than twenty years, was accompanied with a carefully prepared bill, the material of which has been freely used. Having received the correspondence above referred to, the bill now before Congress was prepared, Hon. H. R. Linderman, late Director of the Mint, having been associated with me in the work at your request.

Other correspondence on points germane to the bill in its present form is herewith inclosed. I also add, as pertinent to the subject, more recent correspondence in reference to the abrasion of coin, and the redemption of the bronze and nickel coinage. A communication from the chief coiner of the Mint on the subjects of wastage and tolerance, and a valuable paper from Mr. E. B. Elliott, of the Treasury Department, upon tolerance and other kindred subjects will command attention.

The English government has, during the present year, revised its mint laws, bringing together various orders in council, proclamations, regulations, and acts of Parliament which have heretofore existed only in a scattered form, introducing some important reforms. The present bill has been framed with a like purpose. The correspondence herewith transmitted will show with what care the work has been conducted, and the necessity for the reforms proposed.

The discussion of these subjects by the Congress of the United States, and the enactment of a law substantially like that proposed, will simplify our legislation on these subjects and render it more easily accessible, thus preparing the way for a more intelligent consideration and eventual adoption of a judicious system of international coinage.

A copy of the bill as finally prepared is also appended.

Respectfully submitted.

JNO. JAY KNOX,
Deputy Comptroller of the Currency.

Hon. GEORGE S. BOUTWELL,
Secretary of the Treasury.

CORRESPONDENCE

PERTAINING TO

THE PROPOSED REVISION OF THE MINT AND COINAGE LAWS OF THE UNITED STATES.

A.—CORRESPONDENCE RELATIVE TO THE DRAUGHT OF A MINT AND COINAGE BILL PRELIMINARY TO THE PREPARATION OF THE REVISED BILL, WHICH WAS TRANSMITTED ON THE 25TH OF APRIL, 1870, BY THE SECRETARY OF THE TREASURY TO THE SENATE OF THE UNITED STATES.

B.—CORRESPONDENCE RELATIVE TO THE BILL WHICH WAS TRANSMITTED BY THE SECRETARY OF THE TREASURY TO THE SENATE OF THE UNITED STATES ON THE 25TH DAY OF APRIL, 1870.

A.—CORRESPONDENCE RELATIVE TO THE DRAUGHT OF A MINT AND COINAGE BILL PRELIMINARY TO THE PREPARATION OF THE REVISED BILL, WHICH WAS TRANSMITTED ON THE 25TH OF APRIL, 1870, BY THE SECRETARY OF THE TREASURY TO THE SENATE OF THE UNITED STATES.

Letter of the Director of the Mint.

MINT OF THE UNITED STATES,
Philadelphia, January 28, 1870.

SIR: Your letter of the 18th instant, inclosing "copy of a bill revising the laws relating to the mints," &c., with request to examine the bill carefully, in company with the other officers of the Mint, and return with suggestions, and noting upon it in writing such amendments as I may think desirable, has been received.

I have carefully examined the bill,* and also caused it to be examined by the officers of the Mint, and now return it with the result of such examination, which is the unanimous opinion of all the operative officers here.

First. As to the bill itself, generally. The existing minting laws are the result of the experience of many years, of men educated, scientific, and practical, and form a system as nearly perfect as any upon the statute books of our country. These laws, although passed at different times, were always in accordance with the exigencies of the occasion, and the progress of science. As a system, they might be *codified*, perhaps with some advantage, as some of their provisions are slightly conflicting, but in no manner impairing their efficiency; but the proposed bill by no means meets such adjustments, being a very defective codification which would soon demand new enactments to correct its imperfections. To alter and change a system so long and well established, its efficieny so fully demonstrated by its results, should require reasons, economical and governmental, stronger then first and hasty impressions, or individual convictions. I have no hesitation in affirming, and in this the officers agree, that all the difficulties that have existed, or now exist in the mints or assay offices (San Francisco or New York) have had their origin, not in the system itself, but in a disregard of its provisions, and the rules and regulations for the government of the Mint and branches, as prescribed by the Director, with the approval of the Secretary of the Treasury.

The proposed bill, so far as it is a copy of existing laws, is to be approved, but the alterations suggested, with very few exceptions, are *changes* without any improvement, nor do they provide any remedy for supposed defects beyond what now exists.

I will now notice the details of the bill wherein changes and modifications are suggested.

1. The main feature of the bill lies in the first section, the creation of a new officer, the director of the minting system of the United States, to have his office in the Treasury Department at Washington. Now, apart from all personal considerations, whoever may be the Director of the mints, &c., his office should not be in Washington, but in one of the

* As the preliminary bill mentioned above is not printed with this correspondence, notes are inserted referring to the appropriate sections of the revised bill hereto appended.—J. J. K.

principal mints of the United States. The Director, to be efficient and fitted for his duties, should know the daily operations of a mint from actual personal inspection, should see and know the details of its working, be personally familiar with all the requirements of its respective departments. This he could not do if his office is to be at Washington, however roving his commission may be. He must depend for all his information in relation to mints and assay offices upon the superintendents of these establishments, and any opinion he may form must come to him from those officers who are in daily contact with the actual operations of the mint. Therefore the proposed director can do no more than transmit to the Secretary of the Treasury what the Secretary of the Treasury now receives direct, and without the intervention of such officer. There is no use and no advantage, then, in the proposed directorship. It would be the creation of a new office not required by any consideration of public interest, and consequently the useless expenditure of government funds.

Again, casual visits to the mints and assay offices cannot possibly enable the Director to gather as certain information, or form as reliable opinions upon practical questions or operations, as those resulting from the daily observations of an officer in the mint of such operations, and carried on for a long time. If the superintendents are men of ability and integrity, (and none other should be appointed,) he (the Director) could not alter the information given him by them, nor ought he to risk giving different opinions on practical questions, because he is necessarily, by absence and want of familiarity with their working, not qualified to hazard conjectural opinions at variance with those based wholly on practice. Either, therefore, the proposed Director will transmit the information and opinions he receives from the superintendents, *unaltered* or *modified*. If unaltered, then he is a useless intermediate between the superintendents and the Secretary of the Treasury; if *altered*, he will create confusion and trouble arising from his interference in matters of which he has practically no knowledge.

The ruling thought of the proposed bill, a directorship at Washington, will be more fully and usefully accomplished, and by a far less outlay of the public money, by a *clerkship* in the Treasury Department, in the nature of a *registrar*, to receive all the documents transmitted from the Director, as now, and superintendents of the mints and assay offices to the Secretary of the Treasury, to register, file and preserve the same, so as to be accessible to all who may have the right to examine them, and conduct the mint correspondence, &c., under the direction of the Secretary of the Treasury; and by a COMPTROLLER OF MINT ACCOUNTS, whose special duty it shall be to examine, audit, and adjust all the accounts of every kind, of the mint, branches, and assay offices, promptly and without the delay now attending those examinations. These appointments, and the assignment of duty under them by the Secretary of the Treasury, and under his control, would meet all the necessities of the case, and efficiently supply all, and more than all, the proposed directorship could accomplish.

It does not, therefore, appear to us that the public service is to be benefited by removing the office of Director to Washington. [See sections 1 and 2 of revised bill hereto appended.]

Section 2. The expression "Engraver of the Mint at Philadelphia," does not say that he is to be the sole engraver, as now, for all the mints, although that, we presume, is what is intended. This section virtually restores to the Mint at Philadelphia, and recognizes the primary posi-

tion it has always held, but which the first section would take away. The historical and traditional character of the parent Mint should not be impaired by hasty legislation. [See section 3 of revised bill hereto appended.]

Section 7. The increase of the amount in the surety bonds would embarrass some worthy holders of office, and do nothing to promote security. Integrity of character in the officer is the true security of the government; but when bonds are required, they should have some relation to the character of the office and the nature of the duties to be performed.

The superintendent handles no money, and has no right to receive, hold, or disburse any of the funds of the mints, but is required to give bond in $50,000. If a bond is required at all, it should be in a less amount than those officers who receive and control large amounts of coin, bullion, &c. The assayer handles no coin or bullion, only a few small bits of metal at a time, and yet, under this bill, must give bond in $50,000, while the treasurers, who have the greatest responsibility, give no security.

This, perhaps, was an oversight, but it furnishes some evidence of the defective character of the provisions of the bill now under examination. All the defalcations that have taken place in this Mint, two or three in number, have been by the *clerks* of the *treasurer* having custody of funds or bullion. As regards the officers, and the nature and amount of security, the oldlaw is the better. [See section 11 of revised bill.]

Section 9. The limits of deviation from standard fineness are left out. If an absolute fineness of 900 gold or silver is required, the operations of the mints must cease, as such perfection is unattainable without almost infinite care and labor: it is, in fact, impracticable. The present legal allowance is right, and should be retained. [See section 36 of revised bill.]

Section 11. The reduction of the weight of the whole dollar is approved, and was recommended in my annual report of 1861, [page 10.] [See section 15 of revised bill.]

Section 18. The proposed modifications of existing regulations in regard to wastage cannot be justified by practical knowledge and experience, especially in regard to the settlement of the melter and refiner.

The department of melter and refiner necessarily becomes the sink of all losses that might perchance occur, and experience for a long series of years has shown that while the average wastage has been small, yet in some years the wastage has surpassed one-thousandth, [which section 18 now proposes as the greatest limit allowable,] and that, too, in spite of extreme care and precaution. Such a case occurred in 1863 in this Mint, and, after a thorough investigation, it was found that an unusual amount of volatilization had taken place, in consequence of the unlooked for presence of arsenic in Colorado placer gold. Another year showed a surplus of gold, for which, of course, the officer [melter and refiner] would get no credit. If the proposed reduction of allowance were made, the melter and refiner, however careful and skillful, and whatever his integrity, would have been obliged to refund the loss above one thousandth, and yet would be allowed no credit for his surplus in another year.

The truth is that gold and silver cannot be worked with acids and melting and fire and handling, without some loss. The marvel is that so extremely minute a proportion of loss takes place as mint accounts on an average witness.

We feel confident that if the provisions of this section become a law,

no person of strict integrity and of the utmost skill and experience, and thoroughly knowing his dangers and risks, could accept the office of melter and refiner. The chief coiner is by no means as liable to the wastage as the melter and refiner is. The present law on this subject should not be changed. [See section 11 of revised bill hereto appended.]

Section 25. The recoining of gold and silver by the government. Observe the operation of this singular provision. A depositor of gold, more cunning than honest, is paid in new coins; he takes them away, sweats or files off a few grains, brings them back and demands pieces of full weight; goes and repeats the same work, and the law takes care of him. Or, he may take old and worn pieces, punch holes in them, and then get new coins for them, at a serious loss to government, and gain to himself. This would be a better business than counterfeiting, and would be legal. We may add, no nation keeps up its *gold* coin at the public expense. The case is different with *silver*, on which there is a profit. [See correspondence relative to abrasion of coin, p 80, hereto appended.]

Between sections 33 and 34 a reduction of the coinage charge to one-fourth per cent. would be proper; its total abolition would not be very objectionable.

Sections 35, 36, and 37. These sections embody the provisions of the copper-nickel bill, providing for a new one, three, and five-cent coin, presented to and not passed by the last Congress. There exists no necessity, no consideration of public interest or convenience for a change in the present bronze, copper, and nickel coinage, and the substitution of that proposed in these sections. In appearance, in size, weight, and artistic device, the present is fully equal to the proposed base coinage; and as regards the bronze cent in comparison with the nickel cent suggested, it is superior in every pretension, economy, convenience, easy recognition, &c. The copper-nickel cent would be a small, inconvenient coin, so small as to be almost useless; and the cost of the production, after a careful calculation by some of the most experienced officers of the Mint, would be equal to its nominal value in *gold*.

It costs as much (material excepted) to make a copper-nickel cent as a gold double-eagle.

If every consideration of economy and a desire to prevent useless waste of the public money condemns the authorizing of the coinage of a nickel-copper one-cent piece, why introduce a *three* and *five*-cent piece of the same metals and proportions, when the existing coins of the same denominations are equal, if not superior, to the proposed.

Then, again, the proposition to abolish the *silver* five-cent piece in aid of the nickel coin, is one that would be by common consent condemned, particularly in a country like ours, abounding in silver ores, and near the day of the resumption of specie payments. We cannot advise this change. [See sections 30, 31, and 32 of revised bill.]

Section 39. This provides for the redemption of the copper, bronze, and copper-nickel, except the three and five-cent pieces, whose redemption is already provided for, and in progress of execution.

This provision we deem unnecessary, and not demanded by the public, for whose convenience alone "as change" these coins were made.

The provisions of this section, if enacted into a law, in connection with sections 35, 36, and 37, would withdraw from the treasury a large amount of money. This section virtually and practically authorizes the redemption of all the base coinage now in circulation, and this redemption to be in the "national currency." How is this effected?

Simply this way, and we have examples of a similar kind of redemption almost every day:

The section first proposes to redeem at par, at the Mint in Philadelphia, every coin of copper, bronze, or nickel now in circulation, by exchanging them for the new coin authorized by the bill. The exchange is made, the new three and five cent pieces are received by the depositor, who immediately, under the other provisions of the section requiring the United States Treasurer and assistant treasurer to redeem such new coin in "national currency," &c., when presented in sums of not less than $50, carries his new coin to the Treasurer, and demands its redemption in the national currency.

Now, when it is known that up to June 30, 1869, the copper, bronze, and nickel coinage of the Mint amounted to $10,407,603 55; that less than one million has been redeemed, and that, making due allowance for loss or destruction of coins since issue, there is still in existence not less than eight millions, the question of redemption at this time, and in view of the size of our national debt, becomes important. As "these coins were issued for the convenience of the people," with no promise proposed or expectation of redemption; that the public are satisfied with these coins; that their redemption would largely increase our interest paying debt, the necessity or advantage, public or private, of such redemption, at this time, does not clearly appear. It may be well hereafter, not now. [See section 33 of revised bill; also correspondence relative to redemption of minor coinage, p. 84, hereto appended.]

Sections 44 and 45. These sections relate to the union of the office of superintendent and treasurer in the assay office, New York. The propriety of such a merger of office is more than doubtful: it is wrong in principle, and, when possible, should be avoided. The drawer and the payer of the warrants should never be the same person. The merger now suggested destroys a most salutary check, and necessary, as recent events have shown. The proposed creation of the office of assistant superintendent cannot and will not remove the force of the objection to the merger of the offices named. Such additional officer would only increase the number of officers and the expenses of the assay office, without any corresponding benefit, real or imaginary. [See sections 26 and 55 of revised bill.]

Section 54. The separation of the offices of treasurer of the Mint and assistant treasurer at Philadelphia and San Francisco, is a wise and proper measure, particularly in Philadelphia, where the places of business are so widely separated. [See section 3 of revised bill.]

On the margin of the bill we have noticed sundry amendments, some verbal, others important, as also some suggestions which are more fully set forth in this communication.

As already stated, most of the difficulties that have arisen can be traced directly to the failure of the branch mints and assay office to recognize the authority of the Director of the Mint and his official relations to them.

Under any circumstances the security of the government must depend mainly upon the high character of the appointees for intelligence, integrity, and executive efficiency; the proper subordination, under the law, of the branches and assay offices to the parent Mint, and the promptness with which the accounts are audited, thus insuring the instant detection of any irregularities that may occur, whether inadvertently or otherwise.

We have thus given our views plainly and from a conviction of official duty, with no other desire or intention than to maintain the high char-

acter of the minting system of our country, and promote the true interests of government and people.

This communication has been read to and approved by all the operative officers of this Mint as a whole; in a single minor point there is some variance of opinion on the part of one officer.

Very respectfully, yours,

JAS. POLLOCK, *Director.*

Hon. GEORGE S. BOUTWELL,
Secretary of the Treasury, Washington, D. C.

Robert Patterson to Mr. Knox.

No. 1825 DE LANCEY PLACE,
Philadelphia, February 10, 1870.

DEAR SIR: I should be glad to learn from you whether you consider your task limited to a revision and consolidation of the present mint laws; or do you feel justified in going further and introducing amendments and improvements? In general, you seem to have proceeded with conservative caution; yet, in some cases, you overstep the line, and generally with advantage. Perhaps I might be disposed to go still further. Not to go into details, I make one suggestion. By the draught you abolish the combination of treasurer and assistant treasurer, but you retain a treasurer of the mint. Why should not the superintendent be also treasurer? The offices were always combined in the little branch mints, and I see no special reason why they should be separated in any of the mints. You combine them in the assay office at New York, and properly so. An objection to the bill that you must expect to have made, will be that it multiplies officers and salaries—a Director with official helps, and two treasurers or assistant treasurers, now holding offices in combination. If these treasurers are abolished and their duties devolved upon superintendents, the expenses will be diminished materially. It might be judicious to proceed still further in this consolidation. I have always thought that the offices of coiner and melter and refiner might be conveniently combined. If this were done a great deal of detail and inconvenient *friction* might be avoided. Instead of bullion being delivered to the melter for his operations, then back again to the treasurer, then to the coiner, and again back to the treasurer, part in coin, and part in clippings, to be again returned to the melter and refiner, it would be, I think, an improvement if we had but a single officer to receive bullion from the treasurer, and carry it through all the operations, melting, refining, casting into ingots, and being finally discharged only by the delivery of coins or stamped bars into the treasury. Such an officer might be called melter and coiner, or coiner simply. If it were not desirable to go this length, a clause might be introduced authorizing the offices of melter and refiner and coiner to be filled by one person, at the recommendation of the Director, the compensation not to be increased. To sum up, it is my opinion that the mint organization should be threefold: 1. An officer to receive and pay for bullion; 2. An officer to assay it; 3. An officer to manufacture it.

Address me at 329 Chestnut street.

Yours, sincerely,

R. PATTERSON.

JOHN J. KNOX, Esq.,
Deputy Comptroller.

Mr. Patterson to Mr. Knox.

FIDELITY INSURANCE, TRUST AND SAFE DEPOSIT COMPANY,
329 and 331 Chestnut street, Philadelphia, Pa., March 5, 1870.

DEAR SIR: I have gone carefully over your printed draught of a bill revising the laws relative to the mints, assay offices, and coinage, and now return it, with such modifications as seem to me desirable. You will perceive that I have proceeded on the theory of official organization indicated in my letter of the 10th ultimo. I am satisfied that in principle this is correct, but will be quite content, on personal grounds, that the offices of melter and refiner and coiner be kept distinct, as under present laws. My "notes" on the revised bill are intended for yourself, as an expert familiar with the general subject. They will be unintelligible, I fear, to those who have not given some special attention to our mint organization and practice.

The department and the country will owe you thanks for the intelligent and laborious attention you have given to this business, and if the bill should pass, I trust you will find your reward in the gratitude of all who have an interest in the effective working of our mint establishments.

Very sincerely your friend,

ROBERT PATTERSON.

JOHN JAY KNOX, Esq.,
Deputy Comptroller of Currency, Washington, D. C.

NOTES ON THE MINT BILL.

By way of introduction to the bill, in the form in which it is now presented, it may be stated that the theory on which it is proposed to establish the official organization of the working mints is the following:

OFFICE OF SUPERINTENDENT AND TREASURER COMBINED.

1. There is an officer to represent all transactions between the mint and the public, with whom all deposits are made, and by whom they are paid for; the organ with whom all correspondence and business are conducted, and to whom is given all such supervision of the operations of the mint as is necessary to its effective working in meeting the public demands. This officer is the *superintendent*, acting also as treasurer. [See section 3 of revised bill appended hereto.]

THE ASSAYER.

2. An officer on whom is devolved the duty of determining, by proper scientific methods, the value of bullion, for settlement with depositors and the officers. This officer is the assayer.

OFFICE OF MELTER AND REFINER AND COINER COMBINED.

3. An officer to carry out the metallurgic and mechanical operations necessary to furnish bars and coins for the settlements to be made by the superintendents with the depositors. This officer assumes the functions heretofore devolved upon the melter and refiner and the coiner. His title may be *melter and coiner*.

This form of organization appears to be a natural one, and likely to facilitate an effective and economical working of the establishments. It dispenses with two officers by a consolidation of duties. The superintendent, in addition to the ordinary duties of supervision implied by his title, and heretofore devolved upon him, (or upon the director acting as such,) becomes also the fiscal agent or treasurer. No sufficient reason can be given in theory, nor could any be found in practice, why these duties should not be consolidated.

THE TREASURER NOT NECESSARY AS A CHECK ON THE SUPERINTENDENT.

If it should be contended that a superintendent and treasurer must be separate officers because the former might impose a check upon the latter, there ought, for the same reason, to be a superintendent imposed over the United States Treasurer at New York, or at Washington, or at Boston, or over collectors of internal revenues. Such a duplication of officers for such a purpose is useless and expensive. At the mints, in particular, where there are assayers to determine all questions of value, and depositors watchful for their own interests, the officer acting as treasurer is under a constant supervision which he cannot escape. Nor is there anything in such duty inconsistent with the general control of the mint establishment given to the superintendent. The officer who is more particularly brought in contact with the public is the one who can best know the public wants and best direct the energies of the establishment to meeting those wants. This line of argument need not be enlarged on, except to add that already, in the organization of the smaller branch mints, the duties of superintendent and treasurer have been united in one officer, with great advantage and without objection, and there seems to be no reason why the plan should not be extended to the larger establishments. (See sections 4 and 26 of revised bill hereto appended.

ADVANTAGES OF CONSOLIDATING THE OFFICES OF MELTER AND REFINER AND COINER.

Again, the two offices of melter and refiner and coiner are consolidated in one. When bullion, after having its value determined, leaves the hands of the superintendent (or treasurer) to be manufactured, it seems proper that the operations necessary for that end should be under one control. At present the course of proceeding is complex. In the hands of the melter and refiner bullion is melted, refined, and put into fine bars or into ingots, and returned to the treasurer. If in ingots, these are then delivered to the coiner, who manufactures coins therefrom and returns these, with the clippings unmanufactured, to the treasurer. The clippings again go to the melter and refiner, are again melted, again returned to the treasurer, again delivered to the coiner, and so on. It would be simpler and more convenient if a single manufacturing officer treated the bullion by all the metallurgic and mechanical applications necessary to prepare it for final delivery in a form necessary for payments. There would be incidental practical advantages in this arrangement. At present there are two corps of workmen under control of two officers, and those of one officer cannot be detailed to assist the other without special favor, although this might often be convenient. There would be an economy in having the whole force under one control. Again, a melter and refiner, negligent or unskilled, by the imperfect manner in which the ingots are prepared, gives great annoyance to the coiner in the roll-

ing and working of the metal, which may be, and sometimes is, a subject of complaint. If the officer who coined had also the control of the melting, he could have no cause to complain, except of himself.

It may be added that a consolidation of officers such as is proposed has, in this case, also been practiced at the small branch mints with advantage, where the positions of coiner, and melter and refiner were held by one person. Of course, in a larger establishment a manufacturing officer filling such duties should be provided with skilled assistants to take charge, in subordination to him, of the departments into which the business would naturally divide itself, namely, the melting and refining and mechanical.

THE OFFICE OF DIRECTOR SHOULD BE AT THE SEAT OF GOVERNMENT.

Such being the organization of the single mint or assay office, as a manufacturing establishment, it is proper that where many such institutions are established, a general oversight of the whole should be vested in some one officer as director. Heretofore this supervision has been devolved upon the officer at the head of the Mint in Philadelphia. The advantages of this arrangement are its economy, and the experience which must be given by daily practical observations of minting operations. The disadvantages, however, seem to preponderate. First. An officer whose duty fixes him at one establishment cannot be spared for the visitation to other establishments, which, for any effective supervision, ought periodically to be made. Second. The Mint at Philadelphia is itself one of the institutions requiring supervision, and the officer at the head of it, if in fault, could not be expected to report upon his own shortcomings. Third. An officer at the head of one establishment is apt to have his views narrowed to the wants and standing of that establishment alone. Instead of looking at the institutions for coinage as a whole, he will be apt to think too much of the business and success of the particular one over which he is placed in more special charge, even, perhaps, being wakened to jealousy at the growing importance of subordinate establishments. Fourth. The mints and assay offices being under the control of the Treasury Department, there are disadvantages in the officer having general direction being located at a distance. The Director of the mints should be fixed at the seat of government, for the same reasons of propriety and convenience as have located there already the directing officers of other establishments distributed through different parts of the country. The various assistant treasuries, post offices, pension agencies, &c., have their heads at Washington, without its being ever thought proper or possible to transfer them elsewhere. A Director of the mints and assay offices, located at the seat of government, if possessed of the proper qualifications, could give all the needful supervision now imposed upon the Director of the Mint at Philadelphia, with special advantages for the work not likely to be secured by the present arrangement. The duty of visitation imposed upon him is an important aid to any effective oversight, and this *he* could perform, while it would not be practicable for one in charge of a working mint. Being himself without direct interest in the patronage of the mints, he could revise, in an economical and yet impartial spirit, the estimates for those establishments, and correct all tendency to extravagance. From the opportunities afforded him of intercourse with representatives from all parts of the country, he would be in the most favorable position for discussing and forming conclusions respecting all forms or modes of coinage, and

the production, manufacture, and distribution of the precious metals. [See section 1 of revised bill hereto appended.]

Dismissing any further presentation of these general views, a few notes will be added in explanation of certain details in the bill. The portions to be commented on are noted by the letters, &c., in the margin.

ASSAYER A CHECK ON SUPERINTENDENT.

A.—The old mint certificate here referred to has fallen into disuse. It is proper, under the proposed organization, that it should be practically revised, and as a check upon the superintendent the assayer ought to verify and countersign the same. These certificates, duly receipted for by the owners, become the superintendent's vouchers of payments. [See section 26 of revised bill.]

OPERATIVE OFFICERS SHOULD NOMINATE SUBORDINATES.

B.—The operative officers, if they are to be held responsible at all for the workmen in their charge, should not have imposed upon them any such without their request and consent. At present the superintendent (who gives no bonds and has no responsibility) chooses the men to whom the operative officers must confide the treasure for which *they* have given security and are held responsible. By the amendment proposed, the superintendent appoints only on the recommendation and nomination of the operative officer, and a general power of approval is also given to the Director. [See section 4 of revised bill.]

DISTINGUISHED ARTISTS MAY BE EMPLOYED TO PREPARE DEVICES, MODELS, ETC., FOR NEW COINS.

C.—The duties of the engraver are defined in a manner somewhat different from those of the old Mint law. In the progress of art the whole system of preparing *working* dies for coins has been changed, and has become mechanical instead of demanding the graver's tool. When *new devices* are required the necessity of a new or original die arises, and a high style of art is required. The engraver who may be at the Mint is not, necessarily, the person best qualified for such a work. In France, the government, when a new coin is to be issued, selects the most appropriate device and die from a *concours* or competitive trial, in which the best artists are requested to participate. Perhaps it is to this cause we may attribute the perfection reached in the coinage of that country. Without insisting that this is the best plan, it is surely judicious to change the present law, which gives to the one person, who may happen to be engraver at the Mint, a monopoly in preparing new devices and dies where new coins or changes of old become expedient. [See section 8 of revised bill.]

DIFFERENCE IN AMOUNT OF BONDS.

D.—The responsibilities of the officers being very different, the rates of security should be so. The assayer, for example, holds no treasure in his custody. [See section 11 of revised bill.]

SALARIES PAYABLE MONTHLY ONLY.

E.—This amendment, prohibiting payments of salaries and wages in advance, would impose some check on the hand-to-mouth style of living,

which is encouraged by permitting advances, so that by pay-day scarcely a cent remains unconsumed. [See section 12 of revised bill hereto appended.]

SILVER DOLLAR, HALF DIME, AND THREE-CENT PIECE DISCONTINUED—COINS LESS THAN DIME OF COPPER-NICKEL LEGAL TENDER—ONE-CENT PIECE OF ONE GRAM IN WEIGHT.

The silver dollar, half dime, and three-cent piece are dispensed with by this amendment. Gold becomes the standard money, of which the gold dollar is the unit. Silver is subsidiary, embracing coins from the dime to half dollar; coins less than the dime are of copper-nickel. The legal tender is limited to the necessities of the case; not more than a dollar for such silver, or fifteen cents for the nickels.

G.—In the printed draught the cent piece is fixed at one and a half gram, while its weight, if proportioned to the higher nickel coins, should be one gram, at which we have fixed it. There may be practical difficulties in coining so light a piece, but if possible they ought to be overcome rather than admit so incongruous a disproportion. [See sections 15, 16, 17, and 18 of revised bill.]

DISKS OF OVER ONE HUNDRED DOLLARS SHOULD BE AUTHORIZED.

H.—The old law admitted of the formation of disks as well as ingots, and it is desirable that the option should remain. Large disks, prepared of fine metal, of a definite weight, struck like medals, might prove useful. A five-ounce gold disk—over $100—if practicable to manufacture, would be an aid to commercial exchanges. [See section 20 of revised bill.]

COINAGE CHARGE SHOULD BE RETAINED.

I.—The present one-half per cent. coinage charge is retained. The only mint where coinage is free is the British, and the political economists and statesmen are so unanimous in recommending a seigniorage that the Chancellor of the Exchequer proposes to introduce it into Great Britain. It would be strange if we, by retrograding, while she is advancing, should become the sole exemplars of an exploded system. It would, in view of an *international* coinage, be especially inopportune to abandon a seigniorage, for it is recognized on all hands that under such a code there must be a tax, and a uniform tax for coinage. [See section 25 of revised bill; also, English coinage act, 1870, section 8, Senate Mis. Doc 132, 41st Congress, 2d session, page 34.]

SILVER COIN SHOULD ONLY BE ISSUED IN EXCHANGE FOR GOLD AT PAR—REDUNDANCY OF ALL MINOR COINAGE SHOULD BE PREVENTED.

K.—The present mint laws are express that no silver bullion shall be deposited except that purchased by the Treasurer, and there is no way provided by which individuals can secure silver coin except by bringing gold coin for it, and exchanging at par. This plan was essential to keep silver coin on a par with gold. If the law had been carried out, in letter and spirit, we should never have seen the mints used to manufacture silver coin at all, during the time of depreciated paper currency. This coin was nevertheless issued in payment of deposits, becoming a nuisance to California and to our Canadian neighbors, and imposing a

useless and unlawful labor upon the mints. In the present revision it is hoped the law is made so plain that it cannot be misunderstood. It ought never to be forgotten that where a government issues coin—silver, nickel, or copper—at a reduced and artificial value, it must retain absolute control of the issues, or depreciation and great disorders will be the consequence. To leave to individual holders of bullion, in such cases, to glut the market for their own benefit is a fatal error. [See sections 27, 28, and 29 of revised bill; also, correspondence on necessity of redemption of minor coinage, page 84, hereto appended.]

THE CONSIDERATION OF A SECTION PROVIDING FOR ABRADED COINS POSTPONED.

L.—A clause in the original draught for the redemption of abraded coins is purposely omitted. It is an extremely difficult question, and may wait a more mature consideration. If an international coinage is adopted, some plan of recoinage and redemption might accompany the proposal. [See correspondence on abrasion of coin, page 80.]

TOLERANCE OF FINENESS AND WEIGHT.

M.—In practice, coins are delivered at the Mint in quantities, by drafts of a value different from those defined for the deviations of the old law; by the revise the admitted deviations are adapted to the drafts as actually practiced. [See sections 36, 38, and 39 of revised bill.]

WASTAGE.

N.—An examination of the settlements of copper-nickel accounts for years past would furnish the basis for filling the blank here, for the allowed wastage in that material.

[The bill accompanying Mr. Patterson's notes contained the following provisions relative to wastage: *And provided also*, That the amount of wastage shall not exceed one-thousandth of the whole amount of gold, one and one-half-thousandth of the silver, and —— hundredths of the copper and nickel bullion delivered to him since last annual settlement: *Provided*, That all copper used in the alloy of gold and silver bullion shall be separately charged to the melter and coiner, and accounted for by him.] [See section 44 of revised bill.]

ANNUAL ASSAY AT THE MINT.

O.—The old law required the presence of the *officers* of the Mint at the annual assay—a provision quite useless. For some reasons it might be more correct for them to be absent, in order that the examination might be an absolutely independent one. The presence of the Director is required as sufficient. Such other officers will attend—the assayers especially—as may be invited to assist. [See section 49 of revised bill.]

OBJECTION TO STRIKING MEDALS AT THE MINT.

P.—It is alleged by outside parties, perhaps with injustice, that the superior facilities of the Mint in striking medals, &c., are used so as to break up all private business and competition. [See section 53 of revised bill.]

REFORM IN THE MANUFACTURE OF BASE METAL COINAGE—SPECIFIC APPROPRIATIONS SHOULD BE MADE.

Q.—It is the right and duty of Congress to retain the control over the expenditures of all government institutions. This it can only do through the appropriations. By the present law as to minor coinage, as it is construed, all the expenses of that coinage, in wages and materials, are deducted from the profits before they are paid into the treasury. A large corps of workmen are thus kept employed for whom Congress makes no appropriation. The revised clause corrects this error and leaves no room for misapprehension. [See section 30 of revised bill hereto appended.]

THE ISSUE OF BULLION CERTIFICATES NOW AUTHORIZED IN THE ASSAY OFFICE AT NEW YORK TO BE DISCONTINUED.

R.—A clause giving to the assay office certificate a privilege as money for sixty days is left out. It will be best not to introduce a new gold treasury note, especially one running for all sorts of fractional sums and not protected by suitable guards of engraving. At present, any depositor may take his gold and procure gold notes for the same from the Treasury, better adapted to the purpose than such assay office certificates could be. [Section referred to omitted in revised bill.]

PENAL OFFENSE FOR ANY ONE TO TAMPER WITH ANY BULLION OR OTHER TREASURE DEPOSITED AT THE MINT.

S.—This is meant to prevent the escape of persons committing peculation and pleading that they were not legally placed in charge of the moneys. [See sections 64, 65, 66, and 67 of revised bill.]

BILL TO GO INTO EFFECT TWO MONTHS AFTER PASSAGE—SALARY OF ASSISTANT TREASURER.

T.—Some time should be admitted for reorganization, filing bonds &c., and a delay of two months seems not too much for the passing from the old system to the new.

The salary of the assistant treasurer would have to be defined and increased. That had better not, perhaps, be in the Mint bill, but supplemental. It ought not, at all events, to be overlooked. [See section 68 of revised bill.]

R. P.

THE FIDELITY INSURANCE, TRUST AND SAFE DEPOSIT COMPANY,
329 and 331 Chestnut street, Philadelphia, Pa., March 8, 1870.

DEAR SIR: Since sending on the Mint bill it occurs to me that I made no explanation of an amendment which I introduced in regard to ascertaining the profits on silver coinage. By the present method (which was retained in the revised bill) the profits were computed as the difference between the coin, by tale, manufactured at the reduced weight, and that which would have been realized in silver *dollars* of the old weight. For instance, the weight which could be coined into 1,000 silver dollars would realize $1,074 22 in silver coins less than the dollar.

COMPUTATION OF SILVER COINAGE PROFITS.

The difference is called profit, and so credited to the silver profit and loss account. But if the silver dollar is abolished, (as seems to be agreed on, and properly so,) a new normal or standard must be agreed on to estimate profit. This will naturally be the difference between the *cost* and the amount realized in the *coins by tale*. Say, for example, that the bullion coined, as above, into $1,074 22, had cost $1 21 per ounce, or $1,039 84; the profit to be credited will be $34 38. It may be added that this plan, while a necessity under the change proposed, corresponds to the facts and is more accurate, while the other is artificial and involves counter entries to secure accuracy. The rule as to ascertaining profits on the minor (copper-nickel) coinage will be the same.

NICKEL-COPPER ONE-CENT PIECES.

Since my notes were forwarded I learn that the unconformable weight which had been fixed for the cent, (one and a half gram, while the three-cent was three grams, and five-cent was five grams,) was recommended by a supposed practical necessity. I am aware that the nickel alloy is an intractable material, and that a coin so small as one gram, which theoretical considerations would recommend, is difficult to manufacture. If pronounced *impracticable* of course nothing more can be said, but if simply difficult I suggest that this fact tends to protect the coin from the hazards of false mintage. If found difficult to coin in a mint, with all its appliances to facilitate the work, it would become impossible of imitation by the rude methods of counterfeiters. I add, further, as bearing upon the point of weight, that the silver three-cent piece weighs but 11.52 grains troy, while the one-cent nickel piece, at its weight of one gram, weighs 15.43 grains troy, or over one-third more.

Yours, very truly,

R. PATTERSON.

JOHN J. KNOX. Esq., *Treasury Department, Washington.*

Franklin Peale, formerly melter and refiner and chief coiner of the Mint at Philadelphia, to Mr. Knox.

1131 GIRARD STREET, PHILADELPHIA,
January 25, 1870.

MY DEAR SIR: Both of your letters have been received: the direction of the first to Burk street was corrected by the carriers of the post office, after the delay of a few hours.

I beg leave to thank you for the favor of sending me the bill. It is natural, after so many years of service and so much labor in the various departments of the Mint, that it should occupy so much of my attention, and to the proper organization and conduct of which I can never, as a patriot and lover of my country, be indifferent.

Your request of examination shall be complied with immediately, but I regret that so short a time should be allowed on a matter on which there is so much to be said, and for such careful consideration of details as are requisite.

With sentiments of the highest esteem, I am yours,

FRANKLIN PEALE.

JOHN JAY KNOX, Esq.,
Deputy Comptroller, &c.

PHILADELPHIA, *January* 31, 1870.

MY DEAR SIR: It has been impossible to give the attention to a proper consideration of the bill which you did me the honor to submit for my examination, and to write the result within the limited period designated in your letter. I shall have the pleasure, in a day or two, of transmitting my remarks. When they are received, you will observe that I have been candid and unreserved.

The origin of the bill is unknown to me, and I have no other feeling or desire than to make, or rather aid in making, the department of the Mint as perfect in all respects as possible. Such was my ambition when in the responsibility of office; how far, the machinery and processes speak for themselves, and are recognized by all capable of judgment, both at home and abroad.

I trust my remarks may be found acceptable, and remain, with sentiments of esteem,

Your obedient servant and friend,

FRANKLIN PEALE.

JOHN JAY KNOX, Esq.,
Deputy Comptroller.

REMARKS ON A BILL REVISING THE LAWS RELATIVE TO THE MINTS, ASSAY OFFICES, AND COINAGE OF THE UNITED STATES.

On section 1:

OFFICE OF DIRECTOR OF THE MINT SHOULD BE AT WASHINGTON.

It is desirable that there should be a Director of the mints, whose office may be at Washington, or readily accessible to the heads of the departments, of which he should be a member.

The incumbent should be selected from among the most enlightened, scientific, and moral men of the country; such as have occupied the position of Director in the earlier history of the Mint, Rittenhouse, the elder Patterson, and Professor R. M. Patterson; and in England, Herschel, Graham, and others. In Great Britain the master of the mint, as he is called, is a high state officer; the deputy master, as he is called, is his representative, and is in immediate charge.

The office should be entirely free from all partisan influences; the degrading effects of what has been called, very wrongly, politics, better named party chicanery, is too baneful in its habits and tendencies to be tolerated in a matter so sacred and requiring such purity and confidence as the national money and its manufacture. This remark applies, more or less impressively, to every department of mint transactions and incumbencies.

With such a Director, and such freedom from one of the greatest evils of the present political habits of our country, the creation of the office of Director, as contemplated by this bill, would be very judicious; with anything less, it would be only an aggravation of the evil under which we now suffer.

Section 2:

ENGRAVER OR DIE-SINKER.

The term engraver has led to error and evil influences in the nomenclature of the Mint of the United States. The services required are

those of a die-sinker, not of an engraver; nevertheless, it has been so long in use that its abandonment may be difficult. Other remarks, of an explanatory character, will be made on the seventh article of this section, and in section 33.

Section 3, article second:

OPERATIVE OFFICERS SHOULD NOMINATE THEIR SUBORDINATES.

The fourth line contains the provision for the employment of workmen, which requires consideration if not modification. The melter and refiner, in the fifth article, and the coiner, in the sixth article, are responsible for all the bullion charged to them, and yet have no control of the workmen in their departments, either of appointment or discharge; while the treasurer, in article third, has the appointment power, subject to the approval of the superintendent, as it should be in all cases. The want of control in the departments of the melter and refiner, and chief coiner, has been one of the evils—not to use a stronger expression—of the mint laws of the past, and is embarrassing and unjust to those officers. [See section 4 of revised bill hereto appended.]

Section 3:

ONE MINT OF THE UNITED STATES SUFFICIENT.

The multiplication of mints is an unnecessary error; *one* is sufficient for any country; a single one for the civilized world would be best; but that being impossible or utopian, the fewer there are the better.

It is less costly to transport coin and bullion than to erect, furnish, and officer mints at either remote or near points; and the liability to error, fraud, and departure from uniformity, is multiplied in proportion to the number of such organizations.

The case of California may be exceptional, as the mint of Calcutta is with regard to Great Britain. Its distance, and being the center of bullion-yielding districts, may authorize such an establishment in such a situation; nevertheless, it is, even under the circumstances, a question of true policy.

Seventh article: The word "engrave" is not appropriate, as will be seen on reference to remarks in sections 2 and 33, and should be struck out.

Section —. There is a grave omission of a section providing for the assay of ingots, and the necessary allowances of deviation from the legal standard of nine hundred-thousandths, of two-thousandths above and below, for gold, and three-thousandths above and below, for silver. [See section 36 of revised bill.]

Section 7 requires securities from the melter and refiner, and coiner, but as they have not the control of the operatives, by appointment or discharge, and through whose hands the bullion and coins must pass and be manipulated, they should not be held responsible for any loss sustained by the incompetency or fraud of workmen.

Section 11:

WEIGHT OF SILVER COIN SHOULD BE CAREFULLY CONSIDERED—THE LAW SHOULD PREVENT EXCESSIVE ISSUE.

It is very desirable that a coinage of silver should be commenced at an early day, and the weight of such coin should be so adjusted by law as to secure them from transportation as bullion, (*the quality of nine hundred thousandths sacredly preserved:*) at the same time the royalty or

difference between the intrinsic and legal value should be not so great as to offer too strong a temptation to counterfeiting.

The actual value given to this portion of the minor currency by the law of the United States, is a sufficient equivalent for the less value as mere bullion; and the restriction to their legal tender for more than five dollars or less, as well as a restriction by law to excessive issues or emissions, would remove all objections, public convenience being the object of the coinage. [See sections 27, 28, and 29 of revised bill hereto appended.]

To designate what the weight of silver coinage should be at this time is a difficult problem, and should be carefully considered by competent financiers, bullionists, and mint officers, before any law is enacted. [See page 11, Senate Mis. Doc. No. 132, 41st Congress, 2d session.]

Sections 10 and 12:

THE THREE-DOLLAR AND ONE-DOLLAR GOLD PIECES SHOULD BE DISCONTINUED.

The three-dollar gold coin is mentioned in these sections; it should be struck out and abolished for the following reasons: It is a departure from the binary divisions and multiple, so natural and convenient in all human transactions; it is too near in value to the quarter-eagle to be readily distinguished, unless it is made thinner, or by some other form distinguishable from that coin; and finally, it is of no use, but rather an inconvenience in monetary transactions.

Neither is the gold dollar desirable; its coinage should be discontinued. It is not wanted for change, which a proper silver coinage would supply. The objections are, it is too small to be distinguished by the *sensible tests*, and therefore offers unusual temptations to counterfeits, made of silver or copper electrotyped, and being of small value is not usually carefully inspected in current use.

THE WORD PENNYWEIGHT SHOULD NOT BE USED—VERY LITTLE TOLERANCE IN WEIGHT NECESSARY.

The word pennyweight should be struck out, and equivalent decimals of an ounce inserted, according to the present usage of the mint, in this and all other sections of the bill. It would be much better (see fifth line of section 12) to conform to the actual usage of the Mint in making deliveries of coin, from the coiner to the Treasurer, in drafts of five thousand dollars, except the gold dollar, (if retained,) which are usually in drafts of one thousand. The allowances are sufficient, but should be, as before stated, converted into decimals of an ounce. I must add, however, that in the operations of a well conducted mint, with properly constructed balances, there is no need of allowances in the weighings of new gold coins; each draft can, and should be, of the exact legal weight when delivered to the Treasurer.

Section 13. The adjustment of weights in the delivery of silver coins to the Treasurer, &c., should conform in like manner to the usage of the Mint, which is drafts of one thousand dollars. The allowances are sufficient, but should be stated in decimals. [See sections 38, 39, and 40 of revised bill.]

Section 16 provides for the return of clippings, &c., by the coiner to the Treasurer, but there is no provision in this section, or the fifth, for their transfer to the melter and refiner; it is usually, for convenience, a simultaneous operation. [See sections 41 and 43 of revised bill.]

Section 17:

THE ALLOWANCES FOR WASTAGE SHOULD BE REDUCED.

The allowances for wastage are larger than actually necessary; but both sections 17 and 18 require a readjustment carefully made. The word *all* in the tenth line of 17 expresses the meaning of the section, but it is a short word, and may not be always understood in the exact sense intended by the law. [See section 44 of revised bill hereto appended.]

Section 33:

THE DIE-SINKER OR ENGRAVER.

In the seventh article of section 3, the word "engrave" is used; it is not correct, and not applicable, because the dies for coinage are struck from a punch in relief, technically called a "hub." There is nothing for the die-sinker to do, further than to strike in the figures designating the year of coinage, all the processes being mechanical from the forging of the steel to the polishing of the tables of the die for use.*

As there is so little said of the duties of the so-called engraver of the Mint, a fuller description of the processes, with remarks, may be appropriate, particularly with regard to devices, &c. It is one of the important departments of the Mint organization, and should be well considered, in relation to the improved condition of mechanical science in this day. The highest grade of artistic ability should be made subservient to the production and issue of the coins of this republic, in which respect it has hitherto been lamentably, if not disgracefully, deficient. [See section 8 of revised bill.]

DEVICES FOR COINAGE OF THE UNITED STATES.

The representation of an eagle should be omitted on the reverse of all the coins, for reasons that will be stated in subsequent remarks.

"A device emblematic of Liberty" is appropriate, and consecrated by our history, and by usage.

A head in profile is the most appropriate, because it gives opportunity for the highest grade of artistic and classical ability to be employed for the composition of the device, and its execution.

Full-length figures are inappropriate. The parts are too small to permit of expression in the design, and do not permit of sufficient depth to "come up," as it is technically expressed, in striking the coin; and they are easier for counterfeit imitations, and more difficult to detect when counterfeited.

Armorial bearings or devices are to be deprecated, they have all the disadvantages of the last paragraph, and are the relics of feudal, and effete monarchical, and semi-barbarous times, inappropriate to free and enlightened republican government.

Besides the above objections to the conventional eagle (it has no prototype in nature) on the reverse of several coins of gold and silver, required by law, there are others of grave importance; a device on both sides, obverse and reverse, of a coin compels a sacrifice of relief or strength on the obverse or principal side, the metal of the blank or planchet being absorbed between them; whereas a simple reverse, con-

* I may be permitted to observe that a perfect knowledge of this process was acquired in the mint of Paris by myself, and introduced into the United States Mint, in place of the rude and laborious processes previously practiced.

sisting of the legend "United States of America, E Pluribus Unum," &c., around a wreath in low relief, with the denomination of the coin in plain, distinct letters is more expressive, in better taste, and accords with the usage of the most enlightened nations. You are respectfully referred, for a full description of the mode and processes of procuring original dies, published in the proceedings of American Philosophical Society, February and March 16, 1855, (probably in the library of the Smithsonian Institution.)

The Mint of the United States in Philadelphia is now in possession of improved apparatus for procuring from models, and reducing to all sizes and denominations, fac-similes for original dies, and there are artists quite capable, under instructions in regard to exigencies which control the operation of striking coins, to place the United States in the front rank of all nations in the artistic, classical, and mechanical execution of its coinage. [See section 19 of revised bill hereto appended.]

Section 35:

BASE METAL COINAGE—A ONE-CENT PIECE OF BRONZE ONLY SHOULD BE AUTHORIZED.

I am clearly and decidedly of opinion that all the heterogeneous coinage of cents and their multiples, made of silver, alloys of silver, copper, and nickel, should cease, and nothing but cents should be made of bronze of the usual proportions of copper and tin as the best in all respects of the known alloys; it is, however, probable that the time will come—it may not be far distant—when the progress of metalurgical skill will authorize the use of alluminum alloyed with copper for the purpose of minor coinage.

The subsequent sections to the thirty-ninth, inclusive, would require modification or fall with the preceding. [See sections 16 and 17 of revised bill.]

Section 44:

ASSAY OFFICES.

The abolition of all mints, except that of Philadelphia and possibly that of San Francisco (one for the Atlantic and the other, if maintained, for the Pacific portions of the republic) will necessarily require the establishment of assay offices in various bullion producing or dealing localities—New York, and the principal mining districts of the western country. The laws for their government appear to be sufficient, but there are gentlemen, whom you know, whose legal acquirements are superior to mine, and to whose opinions I would respectfully defer. There is, however, one view which I beg leave respectfully to submit, for which we have the authoritative precedent of the mint of France in Paris.

Assayers should be obliged to go through a course of instruction in the United States Mint, be examined, and receive a diploma, with an assay mark, before they are permitted to practice professionally, and that those only, who have been thus prepared, and are of unblemished moral character, should be legally competent to receive commissions as assayers of any of the assay offices of the United States.

F. P.

FEBRUARY 1, 1870.

NOTE.—The clause in brackets in the third article of section 1 is em-

inently proper; there is no connection whatever between the duties of the treasurer of the Mint and the assistant treasurer of the United States. Their places of business or offices in this city should never have been the same, and were ultimately separated by necessity. [Office of treasurer of the Mint abolished; see sections 3 and 26 of revised bill hereto appended.]

Mr. Peale to Mr. Knox.

1131 GIRARD STREET, PHILADELPHIA,
February 16, 1870.

DEAR SIR: The brevity of the time, within which it seemed desirable that my remarks on the bill revising the mint laws should be transmitted to you, was such, that a longer one for reflection and examination would not have been followed by after-thoughts, such as those which accompany this note.

I pray you to receive them with all due allowance, and to believe me, with sentiments of highest esteem,

Your obedient servant,

FRANKLIN PEALE.

JOHN JAY KNOX, Esq.,
Deputy Comptroller, &c.

P. S.—The highly complimentary and acceptable letter of the honorable Secretary of the Treasury has been received.

Additional remarks on mint laws.

PHILADELPHIA, *February*, 1870.

It would seem proper that some legal provision for the melting of deposits, or those crude quantities of gold dust, or other forms of the precious metals, whose weights or qualities cannot be ascertained without this preparation, should be enacted. It is true that there is a law which provides that bullion brought to the Mint should be in a condition fit for coinage. This is theoretically just and proper; nevertheless, there is propriety in affording facility for the accommodation of the public, by authentic and reliable authorities, for melting and assay of the crude results of mining operations, hitherto absent in this country.

The melting of deposits has of necessity been always practiced in the Mint of the United States, by workmen nominally in the melter and refiner's department, but it is no part of his duty as defined by law, neither can it be said that it should be, for reasons which will be obvious hereafter.

The treasurer has no workmen under his control by the present laws, and the deposit melting room and fixtures are nominally without competent head or direction.

In the operations of this department there is a wide latitude for waste, to which must be added considerable difficulty from the presence of the semi metals, arsenic, antimony, &c., in the crude metals from the new bullion producing districts, Montana, Nevada, &c., causing loss and embarrassment, which losses cannot be defined within limits; averages on the large transactions of the Mint have been established, and are no doubt

necessary and correct; and it is also true that in all manipulations of gold and silver, either chemical or mechanical, there are inevitable wastages, and after the "closest getting up" of grains there remains the "sweep," &c., which, in present usages, goes to the reduction of wastage in the meter and refiner's department.

Finally, as there is no responsibility attached to this department, though doubtless performed in good faith, it is not likely that the degree of care will be exercised which might be under other circumstances. It may be that the best means of recovering the last particles of precious metals are not known or practiced, or, in other words, there is room for improvement in the economical processes, with a view of reducing the wastage or loss to a minimum.

F. P.

Hon. H. R. Linderman, late Director of the Mint, to Mr. Knox.

PHILADELPHIA, *January* 25, 1870.

DEAR SIR: I duly received your letter of the 18th instant, inclosing copy of a bill revising the laws relating to the mints, &c., with request to examine the bill and return the same with such suggestions and amendments as I may deem desirable

Having examined the bill, I now return it with the following remarks:

GENERAL PROVISIONS OF THE BILL.

As far as existing laws in relation to the Mint and coinage of the United States are embraced in the bill, they fully meet my approval, nor do I notice any omissions of importance, except that you have not included the provisions allowing the necessary deviations from the legal standard of fineness in the gold and silver ingots, and in the standard weight of the silver coins. The omission of the provisions referred to was no doubt accidental. Having called your attention to the same, I proceed to note the alterations of, and amendments to, existing laws.

DIRECTOR OF THE MINT.

The first section establishes the directorship of the Mint in the Treasury Department at Washington. This measure was recommended by the present able Secretary of the Treasury, in his recent report on the finances, and the subject was no doubt fully considered by him before recommending so important a change. The principal objection to the proposition is, that the chief executive officer should be located at an institution where the various processes and manipulations pertaining to the coinage of the precious metals are carried on. If the uniform practice of the government from the organization of the Mint in 1792 to 1860, which was to continue the Director in office during good behavior, still existed, there would be great weight in the objection referred to, but with new and inexperienced men assuming the duties of the office at every change of administration, the objection is of not much importance. Another objection is that the chief officer, if located at Washington, would not have the advantage of frequent consultations and comparison of views with the operative or manipulatory officers of the Mint on the various subjects of interest arising from time to time in reference to the improvements in science and mechanism in this and

other countries. To some extent this objection would be removed by frequent visits of the Director to the Mint at Philadelphia, and his presence there from time to time when important experiments were being conducted. While referring to this subject, I may remark that if the practice of removals had been carried into effect with respect to the assayer and melter and refiner of the Mint at Philadelphia, and assay office at New York, there is no estimating the evils that would probably have resulted to the public service.

If the Director was located at Washington he would be in a position to consult orally or otherwise at all times with his official superior, the Secretary of the Treasury, and receive his advice and instructions on important matters relating to the officers and business of the different mints and assay offices, and be enabled to act promptly on such business as might come before him, which would be of great advantage. The weak point in our present mint system is, that under existing laws the Director of the Mint prescribes in detail, with the approval of the Secretary of the Treasury, (which is generally a mere matter of form,) all the regulations and instructions for the transaction of business at the branch mints and assay offices. Under these regulations and instructions the business is conducted, but all the accounts and vouchers pass direct to the First Auditor of the Treasury, and neither the Director of the Mint nor Secretary of the Treasury have any means of knowing whether the same corresponds with such instructions and regulations or not. Of course this defect would be obviated if the Director were located at the Treasury Department, as he would then be able to examine all the accounts before their adjustment by the accounting officers. [See sections 1 and 2 of revised bill hereto appended.]

OFFICES OF THE TREASURER OF THE MINT AND ASSISTANT TREASURER OF THE UNITED STATES SHOULD BE SEPARATED.

The third section separates the offices of treasurer of the mint and assistant treasurer of the United States. This is an excellent provision. As long as both offices are filled by the same person no satisfactory examination of funds at either office can be made without first suspending the operations of the Mint, for the reason that the funds of the two offices respectively can be commingled in such manner that a count at either office affords no reliable information as to whether the amount on hand is correct or otherwise; any deficit could probably be made up temporarily by transfers from the one office to the other, and thus go undiscovered. [See sections 3 and 26 of revised bill.]

OPERATIVE OFFICERS SHOULD APPOINT SUBORDINATES.

Section 7 increases the amount of surety to be given by the operative officers. Under existing laws these officers have no legal control of the appointment or removal of their subordinates, to whom they must look for the care and safety of the bullion placed in their custody. If the law in respect to the mode of appointing the workmen in the different departments is not changed, I do not think it would be just to compel the officers to increase their bonds. [See section 4 of revised bill.]

DISCONTINUANCE OF SILVER DOLLAR.

Section 11 reduces the weight of the silver dollar from 412½ to 384 grains. I can see no good reason for the proposed reduction in the

weight of this coin. It would be better, in my opinion, to discontinue its issue altogether. The gold dollar is really the legal unit and measure of value. Having a higher value as bullion than its nominal value, the silver dollar long ago ceased to be a coin of circulation; and, being of no practical use whatever, its issue should be discontinued. [See section 15 of revised bill hereto appended.]

SETTLEMENT OF ACCOUNTS—WASTAGE.

Sections 17, 18, and 19 prescribe more stringent details in relation to the periodical settlement of the accounts of the operative officers. I regard them as necessary and proper. The reduction in the allowance for wastage I also approve, except as to the melter and refiner's silver. The present allowance of silver is three-thousandths. It should not be reduced below two-thousandths. Being a less valuable metal than gold, and frequently containing a small percentage of base metals, which increases the liability to loss in the refining and parting operations, a larger percentage for wastage should be allowed than on gold. While referring to the subject of wastage it should be stated that the allowance therefor is on all the bullion charged to the melter and refiner, which includes the standard bullion in the form of clippings returned from time to time by the coiner and delivered to the former. The result is that the amount of bullion operated on, and on which wastage is allowed, exceeds considerably the actual amount of deposits. There is, of course, much less chance for wastage in simply remelting standard bullion than on bullion requiring refining. I notice this fact in order to show that the allowance for wastage is quite liberal. [See sections 43 and 44 of revised bill.]

ASSAY COMMISSIONERS.

Section 22 discontinues the United States district attorney for the eastern district of Pennsylvania and the collector of the port of Philadelphia as *ex officio* members of the annual assay commission, but continues the United States judge for the district above named as an *ex officio* commissioner. This is a proper alteration. I respectfully recommend that the assayer of the United States assay office at New York be made an *ex officio* member of the assay commission. It is important that there should always be at least one disinterested practical assayer on the commission, to guard against the possibility of its being so constituted as practically to devolve the determining of the fineness of the coins on the assayer of the Philadelphia Mint, who would, in that case, be testing his own work. [See section 19 of revised bill.]

MEDALS—ALL RECEIPTS OF THE MINT SHOULD BE PAID INTO THE TREASURY.

The provision for striking national and other medals at the Mint, under proper restrictions, is proper, and should be retained.

The provision contained in section 24, requiring all moneys arising from charges, deductions, &c., to be paid into the treasury of the United States, is to be commended, as being more clear and explicit than the recent act of Congress on that subject. [See sections 53 and 54 of revised bill.]

ABRASION OF COIN.

Section 25 has evidently been inserted for the purpose of calling forth an expression of opinion on a subject which has not hitherto received

much attention in this country, viz, the protection of the public against the circulation of gold coin worn by natural abrasion to such an extent as to no longer be, in fact, a legal tender for their nominal value. In the place of the section referred to, it would be better to insert one providing that all gold coins reduced below a certain weight shall no longer be a legal tender, except at their actual weight. The effect of such a provision would be to drive all light and defaced coins to the melting-pot, and keep in circulation coins corresponding closely to their legal weight. [See correspondence on pp. 81, 82; also English coinage act, section 4, page 34, Senate Mis. Doc. 132, 41st Congress, 2d session.]

MINOR COINAGE—NICKEL-COPPER PREFERRED.

Section 35 provides for the coinage of a one-cent piece of the same alloy as the present three and five-cent copper-nickel coin, and discontinues the issue of the present one and two-cent bronze coins. A bill containing similar provisions was reported by the Committee on Coinage, Weights, and Measures, and passed the House of Representatives toward the close of the last session of Congress, but was not acted on by the Senate. As to the propriety of discontinuing the issue of the two-cent bronze pieces, I suppose there will be but little difference of opinion. The substitution of a copper-nickel one-cent piece for the bronze coin of the same denomination will be objected to on the ground that the latter is more easily manufactured than the former; while admitting the fact that the alloy composed of copper, tin, and zinc, usually termed "bronze," is more malleable than the copper-nickel alloy, experiments made at the Mint prove that the manufacture of a copper-nickel cent, such as you propose, is entirely practicable; moreover, it may be stated that the more difficult the alloy is to manipulate, the less liability there is to have counterfeiting of the coins made therefrom successfully carried on. In this respect the argument is decidedly in favor of the copper-nickel piece. It is proper to add that experience shows copper-nickel coins to be no more liable to counterfeiting than the existing silver coins.

There are objections to manipulating in the Mint, at the same time, the two different alloys now used for the minor or base coinage, and one or the other should be discontinued, and the issue hereafter be of one alloy only. Under all the circumstances, in relation to the various issues, and the amount of the different denominations in circulation, with which you are familiar, I think that the coinage of the bronze pieces had better be discontinued and the issue of a copper-nickel cent authorized. [See sections 16 and 17 of revised bill.]

REDEMPTION OF MINOR COINAGE NECESSARY.

The system of exchange and redemption prescribed in section 39 is clearly proper, and required to protect the public against the evils of a redundant issue. The amount of base coins issued since the suspension of specie payments is without a precedent, and in some parts of the country these coins have necessarily become redundant.

Surely a just public policy will dictate some measure of relief for the people in this respect. The amount that will be presented for redemption will be small in comparison with the large gains paid into the treasury from their issue. [See section 33 of revised bill; also, correspondence on necessity of redemption of minor coinage, page 84.

ASSAY OFFICES.

The section [50] in which you have clearly defined the legitimate functions of assay offices (other than that at New York, where refining and parting are carried on) is a valuable one, and should be retained. [See section 59 of revised bill hereto appended.]

THE COINAGE CHARGE AND THE EXPENSE OF REFINING SHOULD BE REDUCED.

My views in relation to the necessity of reducing the cost of the refining and coinage of the precious metals in this country will be found in my San Francisco report, to which I invite your attention, in the hope that a section containing the necessary provisions on the subject will be incorporated in the bill before it is sent to Congress. I will only add that, disguise it as you may, the coinage charge is, in effect, a direct tax to that amount on the actual producers of the bullion, whereas it should be borne by the people at large, for whose benefit it is converted into coins for a circulating medium. [See sections 25 and 47 of revised bill.]

VOUCHERS SHOULD PASS IN ALL TRANSFERS OF COIN AND BULLION.

In several sections of the bill I notice that you have made amendments to existing laws so as to require vouchers to pass in all the transactions of the Mint.

In section 20 you have also proposed a change in order to prevent delay in the payment of depositors in cases where the bullion previously deposited is refractory. These amendments were proposed by you after your examination of the branch mint in San Francisco in 1866, and were subsequently made a matter of regulation by the department. (See pages 259–'61, Finance Report, 1866.) I regard these amendments, especially the one in reference to vouchers, as very important, and recommend their adoption. [See sections 4, 6, 7, and 47 of revised bill.]

ADDITIONAL LEGISLATION—LAW BETTER THAN REGULATION IN AFFAIRS OF THE MINT.

I notice, also, that you propose to provide by positive enactment of law for several minor points that are now a matter of regulation only. I think this is well, because as little should be left to regulation as possible. Frequent changes in the mode of conducting business at the mints are not desirable. In this connection I will note the fact that, prior to 1867, the *actual* weight of coins delivered to the treasurer was not recorded; if within the limits of tolerance or deviation allowed by law, the legal weight only was recorded. As this weighing prior to delivery to the treasurer is the only check to provide against the uniform issue of what are termed "lights," that is to say, coins below the legal standard, but within the limits of deviation, it should always be recorded. Being at that time Director, I issued instructions to that effect, but, under existing laws, the instructions on this point may at any time be legally altered or amended by the same authority that prescribed them. The fact may also be mentioned that it was the practice for several years prior to 1867 to carefully weigh the pieces reserved from every delivery of coins to the treasurer for the annual trial of the coinage by the assay commission, to ascertain if the weight of the same were within the legal limits of deviation. The law said these coins should be "taken indis-

criminately." Regarding the practice as being *a selection*, instead of an indiscriminate taking of pieces for subsequent trial, I issued instructions for the discontinuance of the practice above referred to. I recommend that the law be made clear and distinct on these and kindred points.

CONCLUSION.

In concluding a somewhat hasty revision of the bill, I beg to remark that the codification and revision of the mint laws is a matter involving careful study and reflection, as well as much labor, but I have no doubt that after having received suggestions from the different experts whom you have addressed, the revision will be brought to a successful completion.

The subsequent enactment of one concise and comprehensive law, in place of the many different and conflicting statutes now existing, will be a convenience to every one who has occasion to refer to these subjects, and also a work of great interest and benefit to the public generally.

Very respectfully,

H. R. LINDERMAN.

JOHN JAY KNOX, Esq.,
Deputy Comptroller of the Currency.

Hon. J. Ross Snowden, formerly Director of the Mint, to Mr. Knox.

PHILADELPHIA, *March* 11, 1870.

MY DEAR SIR: I have written out my views on the bill which you sent me, and have this day mailed the package, (for it is somewhat larger than a letter,) addressed to the Secretary of the Treasury, to your care.

JAMES ROSS SNOWDEN.

JOHN JAY KNOX, Esq.,
Deputy Comptroller of the Currency.

PHILADELPHIA, *March* 10, 1870.

DEAR SIR: I have received your communication inclosing "A bill revising the laws relating to the mints, assay offices, and coinage of the United States," and requesting me to examine it and make such suggestions and amendments as may occur to me. In response to this request I will notice some of its prominent features, and present some suggestions for your consideration.

THE DIRECTOR OF THE MINT.

1. The bill proposes that the Director of the Mint shall have his office in the Treasury Department at Washington.

When the Mint of the United States was established in 1792, and for a few years afterward, the seat of government was at Philadelphia. As a general rule in all the governments of Europe at that time, (and continued to the present,) the principal mint of the country was located at the seat of government. When the general government was removed to the city of Washington, no change was made in the location of the Mint, for obvious reasons connected with the economies of coinage and

the supply of bullion, which I need not in this paper discuss. It has from its organization to the present time continued to be The Mint, and when branch mints and assay offices have been from time to time established, the general regulation and supervision of those branches were placed under the Director. President Washington was fortunate in the selection of the first Director, David Rittenhouse, who was not only a man of great scientific acquirements and general knowledge, but was an accomplished and able mechanic. He was the maker of watches, of orreries, and of his own mathematical instruments. His genius found an appropriate employment in providing and arranging the various implements, apparatus, and machinery required for an institution whose function is the coinage of money. Under such a direction the Mint commenced its work; and a line of successors such as Chancellor De Saussure, Dr. Boudinot, Drs. Robert Patterson, father and son, Dr. Moore, and others, maintained its excellence and efficiency. From 1792 to 1861 no changes were made in the official tenure of the Director, except by voluntary resignation or by the death of the incumbent. It is to be regretted that in recent years a different policy has been introduced, and changes have been made from other causes. This recent practice has to some extent diminished the controlling influence, prominence, and authority which officially belong to the Director of the Mint. But I submit that this is not a legitimate result of the law, but of its administration and enforcement, and is not a valid reason for making the great change in the system which this bill proposes. There are many reasons, which I think are obvious, and will readily occur to any one acquainted with the operations of coinage, why the Director of the Mint should have his official place at the principal Mint. It may well be asked, can an officer at Washington direct, superintend, control, and manage the operations of the Mint in a distant city? Under the familiar legal principle that what a man does by another he does by himself—that is to say, through agents—he may, in one sense, be able to control its operations, but not to superintend and direct them. He could not in any just sense be said to manage the Mint, much less have "the superintendence of the officers and persons employed there." Under the present system all this is accomplished, and more too, by the personal supervision which it is the duty of the Director to give to the institution under his direction and control. He is at hand, also, to make provision for emergencies which frequently arise in the operation of coinage, and which require immediate action.

As to the branch minting establishments, the Director can exercise a controlling influence, not only by instructions and reports, but by the more efficient means which is afforded by the re deposits of the precious metal received at the principal Mint, and by the assays of bullion and coin made and struck at these branches. These and other means and appliances can give him exact information as to the manner in which distant branches perform their work and duty, and afford him efficient aid to secure uniformity and accuracy in the coinage operations of the several minting establishments of the United States. I hold, therefore, that the Director of the Mint, whose office is held at the principal Mint, can better perform the duties of his office than could such officer located at Washington, where there is no mint.

2. While I present these views, I am of opinion that it would be advantageous to the public service to establish, at the seat of government, a bureau for the transaction of business relating to the minting establishments of the United States, and for the settlement and adjustment of the accounts of these institutions. And here I may state that the

bill under consideration contains no provision for the settlement of these accounts. The law, as it now stands, requires the treasurer of the Mint and the treasurers of the branches to present quarter-yearly to the Treasury Department an account of the receipts and disbursements, and of the transactions in bullion and coins, both with the accounting officers and the depositors. It is well known that these accounts have not annually received an intelligent examination at Washington. They have been examined by clerks who have little knowledge of the accounts peculiar to these institutions. I may here state that although the profits on the coinage of the Mint were regularly reported every year, yet for several years the fact was not noticed at the department that large sums of money were reported which were subject to its draft in like manner as other sums of money placed to the credit of the government.

APPOINTMENT OF COMMISSIONER OF MINT AFFAIRS AT WASHINGTON.

I think it would be advisable to authorize the appointment of a Commissioner of Mint Affairs, with such clerical force as the Secretary of the Treasury should approve, and to whom all communications on the subject in question should be made and accounts transmitted. This would provide a convenient office for the transaction of mint business, and relieve the Secretary of the Treasury from details of business which, in the present great extent and diversity of his duties, would be advantageous to that officer, and be beneficial to the public service.

In connection with these duties it would be well also to include that which is proposed in this bill, namely, that such officer should "have charge of all matters statistical and otherwise tending to the development of mining industry and of the precious metals."

It would also be desirable that the annual report of the Director of the Mint should be transmitted to the Secretary of the Treasury through the Commissioner of Mint Affairs, herein suggested, with direction to that officer to examine the same and add to the report such remarks and statements as he should deem expedient. He might also, with great propriety, be requested or authorized to make an annual report on the development of the mining operations of the United States, so far as it relates to the precious metals.

3. As the views herein presented are not in accord with what appears to be the main object of the bill, namely, separating the Director from the Mint and fixing his office at Washington, it may perhaps be unnecessary to notice the other provisions and details contained therein. But as they may not receive the sanction of the department nor of the committee of Congress to whom the papers may be referred, I will briefly notice some of the other provisions in the bill and some omissions which occur to me.

Moreover, this course seems proper, because if the suggestion which I make in reference to the appointment of a Commissioner of Mint Affairs should be favorably received, the bill in question can readily be so amended as to make the other sections harmonize with it.

THE MINT AND ITS BRANCHES.

4. It is proper that one mint, as is now prescribed by law, should be designated as "The Mint," and the others as branches of it. For the sake of unity and proper organization this, it seems to me, is necessary. Many reasons could be given for this opinion. I will content myself with presenting but one, which I think sufficient. The coinage of the Mint

and its branches should be designated and known. "For the purpose of discriminating the coins stamped at each branch and at the Mint itself," as is now required by law, a letter is placed on the reverse of the coins struck at each branch; the absence of any letter (as a mark) on the coins shows that such coins were struck at the mint. There are many advantages for the continuance of this practice; prominent among which is that, in case of defective coinage, either in fineness, weight, or otherwise, the *place* where the coins were struck may be known. If a branch mint which has an inconsiderable coinage should, by accident or design, issue pieces outside of the limits prescribed by law, if there was no mode of ascertaining where the coins were issued, the coinage of all the minting establishments might be required to be withdrawn from circulation. A case in point did happen about twenty years ago in the coinage of one denomination of coin struck at the branch mint at New Orleans. I may add that it is due, as a matter of justice to the officers of **each mint, that the coins should thus be designated.**

5. There is an omission to require assay pieces to be transmitted from different mints for the annual assay or trial of the fineness and weight of the coins. These assay pieces are taken indiscriminately, at each delivery of coins, from the chief coiner to the treasurer, the number being prescribed by the Director. [See section 42 of revised bill hereto appended.]

6. The transmission to the Treasury Department of quarter-yearly accounts from the Mint and its branches, and the assay offices, as is now **prescribed by law, is omitted.** [See section 4 of revised bill.]

AMOUNT OF SILVER USED IN ALLOY SHOULD BE DIMINISHED.

7. The alloy of the gold coins, in this bill, is the same as is now prescribed by law. But the quantity of silver may, with great propriety, be reduced from fifty-thousandths, as is now *permitted*, to say ten-thousandths. I, as Director of the Mint, made this matter a subject of *instructions* in September, 1853, which I reproduce here. "It is highly important to secure uniformity in our gold coinage; and to accomplish this all deposits of native gold, or gold not previously refined, should be assayed for silver without exception, and refined to from .990 to .993. The gold coins of the Mint and its branches will then be nearly thus: Gold, .900; **silver, .008; copper, .092.**"

The object of this regulation was to attain a greater uniformity in the *color* of the coins than had theretofore been obtained, and also to save the loss of silver unnecessarily used in the alloy. Under these instructions the coinage has since that time been executed. But the passage of a new law would seem a fit occasion to make this the subject of legislation by making the limit not to exceed ten thousandths in every one thousand parts. At present it is *permissible* to use fifty-thousandths of silver, which would make the coin of a lighter color than is desirable, and has no effect whatever upon their value, the excess of silver being **uselessly employed.** [See section 13 of revised bill.]

COINAGE CHARGE SHOULD BE ABOLISHED.

8. Gold coins being the only metallic money of the United States, and a standard of value, it is, in my judgment, inexpedient to authorize a charge upon such coinage. It reduces *pro tanto* the mint price of bullion below its market value. Where there is no charge for coinage the mint price is the same as the value of the metal when coined. It is to be noted that, under our present laws, there is a coinage charge, and it

will be observed, by reference to the tables of the value of foreign coins annexed to the annual reports of the Director of the Mint, that there are two values stated: 1. The value of the coins as compared with the legal content or amount of fine gold in the coins of the United States. 2. The mint value of such foreign coins after the deduction of the coinage charge, namely, the one-half of one per cent. There is a similar double valuation of all bullion brought to the Mint for coinage. The abrogation of a coinage charge would rid us from the incongruity of giving two different values to foreign coins and uncoined bullion; and under some circumstances, connected with our commerce and exchange with foreign nations, it would have a tendency to increase our gold coinage. On the other hand, if the market value is greater than the mint price, our coinage receipts must be diminished. And just here I make the general remark, applicable to all coinage, that it is a weak invention to attempt to make money with a less quantity of metal than that metal is worth in the markets of the civilized world. [See section 25 of revised bill hereto appended.]

CHARGES OF THE MINT—EUROPEAN CUSTOM—PRIVATE REFINERIES SHOULD BE ENCOURAGED.

9. The provisions of the bill under consideration for charging the depositor with the expenses incurred in refining, separating, toughening, &c., are proper, and are such as are authorized by law.

In the European mints all metals deposited for coinage are required to be fit for coinage, and of standard fineness, or above the standard: the refining being done in private establishments.

While it is inexpedient, until private refineries are in operation in this country, to refuse the reception of unprepared and unrefined bullion, yet, to encourage such work, and looking foward to the time when they will be in operation, I think it would be proper to give a preference in the order of payment of deposits to bullion of that character. This is somewhat provided for in one section of the bill, but not to the extent above suggested. [See sections 46 and 47 of revised bill.]

THE PRESENT SILVER DOLLAR SHOULD NOT BE DISCONTINUED.

10. I see that it is proposed to demonetize the silver dollar. This I think unadvisable. Silver coins *below* the dollar are now not money in a proper sense, but only *tokens*. I do not like the idea of reducing the silver dollar to that level. It is quite true that the silver dollar, being more valuable than two half-dollars or four quarter-dollars, will not be used as a circulating medium, but only for cabinets, and perhaps to supply some occasional or local demand; yet I think there is no necessity for so considerable a piece as the dollar to be struck from metal which is only worth ninety-four cents. When we speak of dollars let it be known that we speak of dollars not demonetized and reduced below their intrinsic value, and thus avoid the introduction of contradictory and loose ideas of the standards of value.

REDUNDANCY OF SILVER COINS SHOULD BE PREVENTED.

When specie payments are resumed with us, or when the paper currency and gold are rated at the same, or even nearly the same, value, unless some stringent restrictions are made upon the issues of reduced silver coins, as now authorized, there will be a plethora of them on the market, and their circulation will be not only an inconvenience but a loss. [See sections 27, 28, and 29 of revised bill.]

MINOR COINAGE—A ONE-CENT PIECE ONLY SHOULD BE ISSUED, COMPOSED OF COPPER AND NICKEL—COPPER, EIGHTY-EIGHT PARTS; NICKEL, TWELVE PARTS.

And in this connection I beg to say that the base coinage provided for in section 35, of five and three cent pieces, will soon be found to be a positive nuisance and a subject of great embarrassment and loss, especially to small dealers. Moreover, the intrinsic value of the copper and nickel in these pieces, and in the one-cent pieces also, is so largely below the nominal value of the coins that we will have a flood of counterfeits and imitations of them, and will otherwise experience great inconvenience from their introduction into circulation. These remarks also apply to the pieces of the character lately issued: and this bill, it may be said, only continues their use. But I think it was a great mistake to abandon the cent of 1857, and substitute one of greatly inferior value, and, moreover, extend the issuing of such base coins to five-cent and three-cent pieces. I have not time at present to enlarge upon this subject, but I may state that, in my judgment, the five cent piece should be composed of silver, and if a three-cent piece is required, let it also be of silver, as heretofore authorized. The cent is the only base coin which should be issued, and this ought to contain the characteristics and composition of the cent adopted in 1857. That cent maintained its color well; it was of convenient size and weight, and a difficult coin to imitate or counterfeit. It was abandoned a few years ago because it was considered that the material of which it was composed—eighty-eight per cent. copper and twelve per cent. nickel—was *too valuable;* when at that very time it was yielding a profit to the government on its issue of about *fifty-six per cent.* Surely the government can afford to put *one-half cent's* worth of metal into a coin which is issued as *one cent.*

CONSOLIDATION OF OFFICES OF SUPERINTENDENT AND TREASURER.

11. The proposition to unite the offices of superintendent and treasurer appears to me objectionable. The disbursements for labor, materials, and supplies of all kinds used in a minting establishment are paid by the treasurer on the warrants of the superintendent. Depositors of bullion are also paid on similar warrants. It would therefore seem improper to unite these offices in one person. If it is necessary to diminish the number of officers, I suggest that the assayer could with some propriety act as treasurer. But wherever the operations are large enough to justify the organization of a mint, I am of opinion that the several offices required should be held by separate persons; this tends to afford a proper check upon their accuracy and fidelity. At the assay offices, except the assay office at New York, the assayer might very properly perform the duties of treasurer. [See sections 26 and 41 of revised bill hereto appended.]

GOLD CERTIFICATES.

12. I see no reason for requiring the certificates of deposits of *gold bullion* to be presented within any specified number of days, as is provided for in this bill. On the contrary, I would give the depositor such a certificate as could be used for all purposes as money, and at any time or at any place. I would go further. I would permit several certificates to be issued for the same deposit, by dividing the amount into

such sums—say, not less than $50 or $100—as the depositor may wish, and make them payable to *bearer*. And, in conjunction with this, I would insert a further provision to allow similar certificates to be issued at the Mint in Philadelphia, the assay office in New York, and the branch mint at San Francisco, and at the treasury and principal assistant treasuries of the United States, on deposits of gold coins of the United States. The advantages of such a measure are manifold. But the subject is too broad to be discussed in this paper. I made a similar suggestion or recommendation in 1857, and wrote out my views upon it at some length. I have a copy at hand, but it is too long to insert here. The present condition of the country, now so near the resumption of specie payments, or, rather, when the values of paper money and gold are approximating each other, renders such a measure, namely, the issuing of coin certificates on the deposit of gold bullion and gold coins, a matter of peculiar interest and importance.

* * * * * * * *

I intended to notice some other points, chiefly of detail and phraseology, in the bill, which seem to require revision; but as you will have responses from the present officers of the mints, they will, no doubt, by them be brought to your attention.

I have the honor to be, with the highest respect, your obedient servant,

JAMES ROSS SNOWDEN.

Hon. GEORGE S. BOUTWELL,
Secretary of the Treasury.

Hon. George F. Dunning, late superintendent of the United States assay office in New York, to Mr. Knox.

NOTES ON THE MINT BILL.

Section 1. Would not less opposition be made to the bill, if the Mint at Philadelphia was, as far as possible, left untouched? That mint must necessarily be the parent mint for years to come. The branch mints must be supplied with dies and machinery from Philadelphia, where mechanics have been specially trained for making coining-presses, rolls, furnaces, molds, &c.; and officers and assistants newly appointed to the branch mints must go to Philadelphia for preliminary instruction. The annual assay must be held at Philadelphia, and all national medals must be struck there; and all experiments for new coins or alloys will necessarily be conducted at the Philadelphia Mint. Then why not let the mint establishment consist of—1. The Mint of the United States and branch mints, at which bullion should be refined by parting, and paid for in coins or fine bars. 2. Assay offices simply, where bullion should be refined by fluxing only, and the same metal returned in unparted bars, stamped with weight, fineness, and value. 3. A Mint Bureau at Washington, attached to the Treasury Department, having general supervision?

BRANCH MINT AT NEW YORK.

This would involve the changing of the New York assay office to the branch mint at New York, which ought to be done. It is a mint in all

except actual coining money, and the power to clothe it with this attribute could be left to the discretion of the President.

COMPTROLLER OF THE MINT AT WASHINGTON.

If the Mint at Philadelphia is left as it is, the chief officer at Washington would have to be called "Director General of the Mint," or "Comptroller of the Mint." Why not combine this office with that of Comptroller of the Currency, and change the title to "Comptroller of the Mint and Currency?"

HIS DUTIES.

Section 3, clause 1. In order to justify the creation of a Mint Bureau, &c., enlarge the power of the Director (Comptroller) thus: After the words "authorized by law" add: "He shall, with the approval of the Secretary of the Treasury, prescribe all regulations for their government; direct the mode of keeping and rendering their accounts; and shall carefully scrutinize the same before they are rendered to the auditor; and all reports, estimates, and requisitions from the mints or assay offices shall be submitted for his examination and supervision." "He shall make an annual report," &c., as far as "now prescribed by law," then add: "He shall take measures to procure accurate statistical information of the discovery and development of mines of the precious metals, the character of their ores, and the methods of working the same; and shall, as fully as practicable, make his office useful in the development of the mining industry of the country." [See section 2 of revised bill hereto appended.]

Clause 2. After the word "Director," in the fourth line, add: "He shall draw warrants upon the treasurer and other officers for the transfer or delivery of coins or bullion; he shall check the treasurer's calculations of the value of deposits, and shall scrutinize all bills for ordinary expenses; and no payment of money, either for bullion deposits, or for ordinary expenses, shall be made by the treasurer except upon a warrant of the superintendent," &c.

DUTIES OF TREASURER.

Clause 3. After "the treasurer," add "of each mint." The parenthesis prohibiting the treasurer from being also assistant treasurer should be covered by section 54. After the word "mint," in third line, change thus: "He shall receive all bullion brought to the mint by depositors, and shall give receipts for the same; and all coins and bullion in the mint shall be in his custody, except when the same is legally transferred to other officers. He shall calculate, not estimate, the exact value of each deposit of bullion, and the charges to be levied thereon; and shall, upon warrants of the superintendent, make payment for the same in coins or bars of the same species of bullion as that deposited; and shall furnish to the owner thereof a certified memorandum of the weight, fineness, gross value, charges, and net value of his deposit." "He shall keep regular and faithful accounts," &c. [See sections 4 and 26 of revised bill.]

MELTER AND REFINER AND COINER.

Clause 4. After "assayer" add "of each mint."

Clause 5. Alter thus: "The melter and refiner" "of each mint" "shall execute all the operations which are necessary in order to form fine bars or ingots," &c.

Section 14. In line 6, for the phrase "within the legal limits of the standard weight," substitute "within the legal limits of deviation." In the last line of this section, instead of the words "to be again formed into ingots and recoined," say, "who shall cause the same to be immediately remelted." The melter and refiner ought not to have the option of keeping light coin *on hand*. A dishonest officer might use them to buy gold bullion outside and keep his accounts good in that way. [See section 41 of revised bill hereto appended.]

Section 15. In line 6, instead of "deposited in a chest," say, "deposited in the pyx," &c. This section should provide for the transmission to the Philadelphia Mint of *branch mint assay coins*. [See section 42 of revised bill.]

ACCOUNTS OF TREASURER WITH OTHER OFFICERS.

Section 17. Change as follows: "That in the treasurer's account with the operative officers of each mint and assay office, the melter and refiner, or coiner, as the case may be, shall be debited with the standard weight of all bullion delivered to him; and shall be credited with the standard weight of all bullion, coins, clippings, sweeps, &c., returned by him to the treasurer, once at least in every year," &c., as in printed bill.

Section 18. Line 1, on page 8, change "between the amount charged and credited" to "between the amount charged and the amount credited." No other change.

ASSAY COMMISSIONERS.

Section 22, line 2. Change "respective standards and weights" to "respective standards of fineness and weight."

Memorandum.—A *weight* fixed by law is as much a "standard" as a fineness so fixed.

Line 4, instead of "the Mint" say "the several mints."

Line 16, change "standard fineness and weight" to "standards of fineness and weight."

Line 19, change "standard or weight" to "standards" simply. [See section 49 of revised bill.]

ABRASION OF COINAGE.

Section 25. This section is a temptation to holders of old coin to lighten them, so as to get them coined free of charge. I suggest the omission of the words "at the expense of the United States."

STANDARD WEIGHTS FOR EACH MINT.

Section 27 and section 28. Substitute: "That in the weighing of bullion at the several mints and assay offices, and in the accounts to be kept thereof, the unit of weight shall be the ounce troy; and it shall be the duty of the Director [Comptroller] of the Mint to provide each mint

and assay office with a set of carefully adjusted standard weights, consisting of a one ounce weight and the necessary multiples and decimal subdivisions thereof, from the thousandth of an ounce to three hundred ounces; and these weights shall be used only for the purpose of adjusting the weights ordinarily employed at the several mints and assay offices, such adjustment to be made at least once in every year, under the inspection of the superintendent and assayer of each institution: *Provided*, That the standard weights of the Mint at Philadelphia shall be adjusted annually in the presence of the assay commissioners on the day of annual assay." [See section 51 of revised bill hereto appended.]

Clause 6. "The coiner" of each mint shall "execute," &c. After the word "purpose," in the fourth line, insert: "He shall keep a careful record of all transactions with the treasurer, noting the weight and character of the bullion received and delivered, and he shall be responsible," &c. [See section 7 of revised bill.]

THE ENGRAVER: THE OFFICE NOT NECESSARY.

Clause 7. Alter thus: "The engraver of the Mint shall prepare and engrave, with the legal devices and inscriptions, all the dies required for coinage in the several mints, and shall perform such other service in the preparation of dies for coins, medals, &c., as shall be required by the Director [Comptroller.]"

I would abolish the *office* of engraver, and empower the Director to employ competent artists to prepare dies, &c. The *office* is useless, and is a hindrance to improvement. [See section 8 of revised bill.]

ASSISTANTS TO OPERATIVE OFFICERS.

Section 4. After the word "superintendent" in the first line, substitute "may" for "shall," and in the third line change "one assistant" to "one assistant officer."

N. B.—The assayer needs several assistants, [not officers,] young helpers or assayers. These should be provided for. I would give these the title of "laboratory assistants," and insert after the word "Philadelphia," in the fourth line: "He may also appoint such clerks for the superintendent, and such laboratory assistants for the assayer as shall be approved by the Director [Comptroller.]"

AMOUNT OF BONDS OF OFFICERS.

Section 7. Very few men fit for mint offices can give bonds for $50,000. Then the responsibility of a superintendent or assayer is far less than that of a melter and refiner, or coiner, or treasurer. I would have the amount of bond to be required, *in each case*, to be determined by the Secretary of the Treasury and the President. [See section 11 of revised bill.]

ALLOY SHOULD BE OF COPPER ONLY.

Section 9. After the word "standard," in the first line, add: "of fineness." Then in fixing the alloy of gold coins in the fifth line, say: "And the alloy of the gold coins shall be of copper." Perhaps it is best to require the alloy to be wholly copper, and say nothing about silver, or insert, "with the least practicable intermixture of silver."

Memorandum.—If it were practicable to *part out* all the silver from gold, the alloy of gold coins should be wholly copper. Formerly it was

the practice to aim at a "gold color" by adding silver in the alloy of gold; but this is discontinued. [See section 13 of revised bill hereto appended.]

GOLD AND SILVER COINS.

"SECTION 10. *And be it further enacted*, That the gold coins of the United States shall be a dollar, a quarter-eagle or two-and-a-half-dollar piece a three-dollar piece, a half-eagle or five-dollar piece, an eagle or ten dollar piece, and a double-eagle or twenty-dollar piece. And the standard weight of the gold dollar shall be twenty-five and eight tenths grains, and the other gold coins shall be in the proportion of twenty five and eight-tenths grains to one dollar of value; and these coins shal be a legal tender in all payments."

The law ought first to declare what coins shall be made, and then fix their weights. [See sections 14 and 18 of revised bill.]

"SECTION 11. *And be it further enacted*, That the silver coins of the United States shall be a dollar, a half-dollar, a quarter-dollar, a dime or tenth of a dollar, and a half-dime or twentieth of a dollar. And the standard weight of the silver coins shall be in the proportion of three hundred and eighty-four grains to the dollar; and these coins shall be a legal tender in all payments not exceeding five dollars." [See section 15 of revised bill.]

SILVER COINS SHOULD BE RECEIVED FOR CUSTOMS.

Section 12. Why except "duties on imposts?" The United States can certainly afford to receive its own silver coins to the extent of five dollars.

TOLERANCE.

Section 13. After the word "enacted," in the first line, insert: "That in adjusting the weights of the silver coins, the following deviations shall not be exceeded in any single piece: In the dollar and half-dollar, one grain and a half; in the quarter-dollar, dime, and half-dime, one grain." This seems to have been overlooked in the printed bill. The rest of this section without change, except changing pennyweights to grains. The changes in section 12 would be—

Three pennyweights to 72 grains.
Two pennyweights to 48 grains.
One and one-half pennyweight to 36 grains.
One pennyweight to 24 grains.
One-half pennyweight to 12 grains.
[See section 39 of revised bill.]

CONVERT PENNYWEIGHTS TO GRAINS.

So long as troy weights are in use at the mints, the employment of the term "grains" is unavoidable. The weights of the coins, expressed in *decimal* parts of the ounce, would be as follows:

Gold dollar	25.8	grains equal 0.05375 ounces.
Gold quarter-eagle	64.5	grains equal 0.134375 ounces.
Gold three-dollar	77.4	grains equal 0.16125 ounces.
Gold half-eagle	129.0	grains equal 0.26875 ounces.
Gold eagle	258.0	grains equal 0.5375 ounces.
Gold double-eagle	516	grains equal 1.0750 ounces.

Silver dollar	384	grains equal 0.80 ounces.
Silver half-dollar	192	grains equal 0.40 ounces.
Silver quarter-dollar	96	grains equal 0.20 ounces.
Silver dime	38.4	grains equal 0.08 ounces.
Silver half-dime	19.2	grains equal 0.04 ounces.

Change in section 13:

Four pennyweights to 96 grains.

Three pennyweights to 72 grains.

Two pennyweights to 48 grains.

One pennyweight to 24 grains.

The weights of the silver coins might readily be expressed in decimals of the ounce, but this would be impracticable for the gold coins.

Of course the small allowances in the adjustments of coins cannot be expressed in decimals of the troy ounce without absurd and interminable fractions. For example:

One grain is equal to 0.00208333+ ounce.

One half-grain is equal to 0.00104166+ ounce.

One quarter-grain is equal to 0.00052083+ ounce.

[See sections 14, 15, and 39 of revised bill hereto appended.

Hon. George Eyster, treasurer of the Mint at Philadelphia, to Mr. Knox.

UNITED STATES TREASURY,
Philadelphia, January 27, 1870.

DEAR SIR: I have yours of the 22d instant in which you invite my views upon the accompanying bill revising the laws relative to the mints, assay offices, and coinage of the United States. My experience at the mint has been so brief as to cause me to feel that I am not the person to express an opinion upon your work, certainly not a reliable opinion upon many parts of it. There are gentlemen in this city, both connected with the Mint and retired from it, whose long experience in that institution and consequent familiarity with its several departments, peculiarly qualify them to give an opinion at once valuable and reliable. Then, too, as you are aware, since the establishment of the assistant treasurer's office at the custom house, the incumbent has been compelled to spend the larger part of his time at the latter place, so that he is obliged to intrust the duties of his position as treasurer of the Mint almost entirely to subordinates, and rely upon their fidelity and judgment in many important particulars.

A cursory examination of the proposed law has revealed a few defects, as it appears to me, principally unimportant, which it is scarcely necessary to recite here. They relate largely to the phraseology, and the changes suggested may, in some instances, render the meaning clearer. My suggestions may be found marked upon the margin of the bill which I herewith return. It is but right to say that these, with the omission to provide for the treasurer's bond, would very probably have come to your notice upon further review of your work.

REDEMPTION OF THE MINOR COINAGE.

Referring to the thirty ninth section, which provides for the redemption of copper-nickel coins, I have to remark that it would be better to

make these pieces redeemable only at the Mint, or, at most, only by such assistant treasurers' in addition as have offices located at the same points as assay offices. If each assistant treasurer and each designated depositary shall be required to redeem these pieces, the danger of redeeming counterfeits will be increased, and spurious coins will find their way to that office most likely to receive them. It will be impossible for each office to provide itself with such a force of skilled counters as to obviate all danger on this account. The present five-cent piece, though not yet largely counterfeited, has been so well imitated as to require the assistance of the assaying department at the mint to determine its character. It is suggested, therefore, that the points at which the proposed pieces are to be redeemed in national currency should be as few as possible, and, at most, only those that have been already indicated. It is believed, too, that an opportunity for redemption at only those points will relieve any actual redundancy. [See section 33 of revised bill hereto appended.]

WASTAGE AND TOLERANCE—REDUCTION NECESSARY.

Upon the subject of wastages and tolerances I have little to say. The reduction in both meets with my approbation, as the experience of years demonstrates that the limit of the first can be largely curtailed without danger or inconvenience to the officers interested, while the continued allowance of an unnecessary margin may some day prove the inducement to carelessness or dishonesty. The same remark applies to the tolerances or deviations in pieces and in quantities of coins from the standard weight. The adjustment should be as accurate as skill and industry can make it. To send coins out from the shops of unequal weight would be discreditable to the government, as well as furnish an opportunity for profit to sharp and unscrupulous dealers. It will not do to say that the limits of wastage and tolerance already fixed by law need not be changed because of the present and past good management of the mints on the part of the operative officers. The proposed legislation is for the future, which must sooner or later witness changes in the personnel of every institution. It is also intended to meet every possible phase of management and mismanagement. So far as regards these reductions the bill as draughted but prescribes that what good men can do and do, bad men ought to do and must do. [See sections 36, 38, 39, and 40 of revised bill.]

BUREAU IN THE TREASURY DEPARTMENT.

The salient feature of your bill seems to be the proposition to establish an office at the Treasury Department at Washington, to take the general supervision of all mints and assay offices belonging to the government. If these places were now for the first time being established, the propriety of managing and directing them from a principal office at Washington would scarcely be questioned, and, indeed, a contrary course would probably not suggest itself. At the establishment of the Mint in Philadelphia, in 1792, that city was the seat of government of the United States as well as the chief commercial city of the country. After the removal of the seat of government the institution was continued at Philadelphia by legal enactment for successive periods of five years, until, in 1828, it was located there indefinitely. Now, if the proposition were to remove the Mint itself, I should very much regret it, as would every Pennsylvanian; and I think very weighty reasons could be adduced to show the impolicy

of any such course. But the proposition of your bill, to place the general supervision of the several mints and assay offices at Washington, strikes me more favorably. It seems to be justified by the increase in number of the institutions in contemplation, and their being situated at different and widely remote places; by their immense importance and the vast development in recent years of the mineral and mining resources of the country. The Director of the Mint has the general direction of the branch mints and assay offices, subject to the approbation of the Secretary of the Treasury. Here, then, are two officials, the one subject to the other, having control of at least six important government establishments, neither of whom is on the ground in any case, and who do not even have their offices in the same State, let alone city. It appears to be more important that these officials should be near one another, for the purpose of consultation about the workings and interests of the whole, than that either should reside at any one of the establishments under their supervising care. The present arrangement for managing the mints and assay offices is an exception to the practice of the government. No other interest subject to the national authority of so great importance, and attaching to so many places, is managed through a central office remote from the Capital. The government might with equal propriety require its several assistant treasurers and designated depositaries to be controlled at Washington by way of New York, as continue its present anomalous practice in regard to its mints and other similar institutions. There is another weighty reason for locating the supervising officer of all these institutions at Washington. It has become the practice to charge the representatives of the people in Congress with the duty of attending to the interests of individuals or localities of their constituency, in any way under the care or control of the national government. The presence at Washington of the head of the mints and assay offices would afford the representatives of the people facilities to attend to the requests of their constituents connected with these interests that they have never yet enjoyed. With the opportunity to confer at Washington, a little leisure could be improved. As it now is, resort must be had to correspondence, not always satisfactory, or a journey, taking them away from public duties.

TREASURER SHOULD APPOINT SUBORDINATES.

That feature in your bill authorizing the treasurer to appoint his own employés I especially commend. Personally, it can make no manner of difference to me, for you propose also a severance of the office of assistant treasurer of the United States from that of treasurer of the Mint, leaving me in the former place. I have long felt that injustice has been done to the treasurer. As you know, the Director and I completed some weeks ago a correspondence on the subject, which is now in the department awaiting a decision upon our respective claims. Congress enacted, by a joint resolution, on the third day of March, 1851, "that the several treasurers of the United States mints, be, and they are hereby, authorized to appoint their own clerks, subject, however, to the approval of the Secretary of the Treasury." The preamble to this joint resolution recites that the treasurers are required to give bond in heavy penalties for the faithful performance of their duties, *and of those under them*, and avers that it is but just that the selections of their clerks should be under their control.

Now, keeping out of view the fact that, with the possible exception of the deposit melters, the treasurers could have no employment for any

other class of employés than clerks, and that, with the exception before mentioned, at the date of the passage of the joint resolution aforesaid all his employés were denominated clerks, a fair construction of the joint resolution, in view of the preamble and the relief sought to be afforded, requires that the word clerks should be read in the sense of employés.

Since 1851 the treasurer has been accorded six appointments, to wit: a chief clerk, a weigher, a calculator, an accountant, a register, and a cashier. At various times since 1851 there have been persons appointed and assigned to duty by the Director in the bullion and cash departments, until the treasurer's force appointed by the Director almost equals his force appointed by himself. The persons appointed by the Director are termed assistants, superintendents, and aids, and in most instances perform clerical duties, and the identical duties that the treasurer's own appointees perform. They are appointed by the Director under his general authority to appoint servants and workmen. If the Director may appoint servants and workmen, and assign them to clerical duty in the treasurer's department, what becomes of the treasurer's undoubted right to appoint clerks? Has not the Director grasped the substance and left the treasurer but the shadow of his right?

But I will pursue the subject no further here. As has been stated, I have discussed it fully elsewhere. I am glad to discover that your bill will accomplish for some future treasurer what my argument may have failed to obtain for me. This feature, without doubt, ought to become a law. In the discussion with the Director, to which I have alluded, the Director takes the ground that the treasurer ought to entertain no anxiety about the bullion-room, for the reason that he is under nothing but a moral responsibility for the bullion until it is about to be turned over to the melter and refiner. I do not agree with the Director here. If the Director be right, however, there ought to be a section added to your bill to protect the rights of the thousands of depositors who annually intrust their millions to the treasurer. This treasure is always in the treasurer's custody for days, often for a month. The depositors are entitled to have something better for their security than the sense of moral accountability of any man or officer.

Referring to your twenty-fourth section, in which provision is made for paying and covering into the treasury of the United States, on the warrant of the superintendent, funds arising from the manufacture of medals, it may not be amiss to state that this has heretofore been unnecessary, for such moneys never came into the treasury of the Mint, but were received and accounted for directly by the Director. The practice has seemed to me to be without authority of law, and the section is probably explicit enough to correct it. [See sections 4 and 54 of revised bill hereto appended.]

COPPER-NICKEL COINS APPROVED.

I am satisfied of the wisdom of the provision your bill makes for a new set of base coins. As good an argument as any in favor of their issue is the fact that the public want and expect them. There seems to be a tendency all the while, hard to explain perhaps, yet nevertheless true, to tire of our inferior coinage. Those pieces at present in circulation are uniform neither in design nor composition, besides not being especially artistic. The frequent renewal of these pieces and the change in the design both baffles and discourages the counterfeiters, and proves a cheaply purchased benefit to both the people and the government. Then, too, the composition of the metals proposed furnishes an alloy altogether

desirable on the score of appearance, wear, cost, and susceptibility to prompt detection when imitated. (See section 17 of revised bill.)

OFFICE OF TREASURER OF THE MINT MAY BE ABOLISHED.

It would seem that the office of treasurer of the Mint might be abolished altogether, and the duties of that position devolved upon the superintendent. This might make necessary the creation of a system of checks to meet the new order of things: but that could be done without difficulty. Each operative officer, for instance, might be required to approve all vouchers for purchases for his own department, or one might be authorized to approve for all. It might be made the duty of the assayer to approve the calculation upon which payment for each deposit of bullion is made. These are probably all the checks that a proper caution would suggest. (See sections 3, 26, of revised bill.)

There might be some change in the arrangement of subjects in your bill, but this I will leave to others to suggest or your own reflections.

NECESSITY OF REVISION OF MINT LAWS.

The mint laws need codification and they need revision. You have made a good beginning, and I hope you may meet with abundant success in your undertaking.

Very respectfully,

GEORGE EYSTER,
Treasurer of the Mint.

Hon. JOHN JAY KNOX,
Deputy Comptroller of the Currency, Washington, D. C.

Dr. M. F. Bonzano, formerly melter and refiner of the Branch Mint at New Orleans, to Mr. Knox.

NEW ORLEANS, *February* 21, 1870.

DEAR SIR: I had the pleasure of examining the "Bill revising the laws relative to the mints, assay offices, and coinage of the United States," and so far as I am able to judge of the provisions therein contained, believe them to be sufficient for the purposes intended. I beg leave, however, to draw your attention to some sections which might be susceptible of amendment.

SILVER USED AS ALLOY SHOULD BE REDUCED.

Section 9. If the proportion of silver in the alloy of gold may vary so largely with respect to the copper, it will be difficult to obtain the uniformity of color which contributes much to the beauty of our coinage. By limiting the silver in the alloy to one fifth or one fourth of the copper a greater uniformity of color would be attained without increasing the difficulties of manufacture. (See section 13 revised bill.)

METRIC SYSTEM OF WEIGHTS RECOMMENDED.

Section 10. It seems to me very desirable that the weights and dimensions of coins should be expressed in the metrical system, instead of the troy ounce, pennyweight, grains, &c. An opportunity is here presented.

which may not occur often, of making the people familiar with this beautiful system, without requiring too great an effort. (See sections 14, 15, 17 of revised bill, also pages 11 and 26 of Senate Mis. Doc., forty-first Congress, No. 132.)

WASTAGE ON GOLD, AMPLE; ON SILVER, SHOULD BE INCREASED.

Section 18. One-thousandth for wastage on silver, though usually sufficient, may in certain cases fall short of the actual loss. In melting amalgam and very base metal, the toughening with niter is indispensable, and the silver becomes partially oxidized in this operation. On gold, the allowance of one-thousandth for wastage is ample. (See section 14 of revised bill.)

MANUFACTURE OF SMALL BARS.

Section 32. The manufacture of small bars, say of less than ten ounces, may at times interfere with the regular coinage operations. If such bars are authorized, their manufacture should be restricted to the assay offices alone.

Very respectfully and truly, your obedient servant,

M. F. BONZANO.

JOHN JAY KNOX, Esq.,
Deputy Comptroller of the Currency, Washington, D. C.

Assistant treasurer at New York to the Secretary of the Treasury.

UNITED STATES TREASURY,
New York, January 28, 1870.

SIR: I have the honor of handing you herewith the draught of bill relative to the Mint and its branches. Such suggestions as have occurred to the officers of the assay office and to me are noted on the margin, and are respectfully submitted.

I am, with respect, your obedient servant,

CHAS. J. FOLGER.
Assistant Treasurer United States.

Hon. GEORGE S. BOUTWELL,
Secretary of the Treasury, Washington, D. C.

Andrew Mason, melter and refiner, United States assay office, New York, to Mr. Folger.

UNITED STATES ASSAY OFFICE,
New York, January 27, 1870.

DEAR SIR: Having united with my fellow officers in a careful consideration of the details of the bill inclosed in the letter of the Secretary of the Treasury of the 18th instant, to which you have called our attention, I trust it will not be considered improper, under the large latitude given by the instructions, to suggest the advisability of concentrating all the mint establishments into one, instead of adding another to the list

ONLY ONE MINT ESTABLISHMENT REQUIRED.

Such a measure would relieve the government from a heavy burden and, possibly, yield some revenue. It would at the same time be a benefit to every locality, including even those where the Mint, &c., are now placed, because the charges to depositors for refining, coinage, &c., might be reduced; and if it should be located where the bullion, whatever may be its form, is now taken, in the natural course of trade the cost of transportation would be practically eliminated from the calculation.

Very respectfully,

ANDREW MASON,
Melter and Refiner.

Hon. CHARLES J. FOLGER, *Treasurer, &c.*

Notes on mint bill by United States assay office, New York.

Add to section 3, in reference to duties of Director, the following: "It shall be his duty to receive all accounts accruing in the mints and assay offices, and, after examination, to certify the balances and transmit the accounts, with the vouchers and certificate, to the First Comptroller for his decision thereon." (See section 3 revised bill.)

In the same section: In place of "unparted, standard, and refined," insert the words "all kinds of."

In same section: In reference to duties of treasurer, after the word "Mint," insert the words "as a deposit," so that it will read: "He shall receive all bullions brought to the Mint as a deposit."

NOTE.—Brought to whom?—I see no provision in the bill directly authorizing any private person to bring bullion or gold dust to the Mint for assay, refining, and coinage. Nor is there any such authority to be inferred, unless from the use of the words "depositor," &c. Should there not be a section or phases specific upon this point like section 46?

In same section: Insert, in reference to duties of treasurer, "He shall present monthly to the Director of the Mint, according to such forms as shall be prescribed by him, an account of the ordinary receipts and disbursements of the Mint; and of the bullion accounts, quarter-yearly, for the purpose of being adjusted and settled."

In same section: With reference to duties of assayer, insert the words "and bullion generally," so that it will read, "he shall also make assays of coin and bullion generally whenever instructed to do so by the superintendent."

In same section: Omit the following: "He shall also have authority to assay at his discretion such ores as may be presented for that purpose, and a charge covering the expenses of the process shall be collected of the owner." (See sections 4, 5 of revised bill.)

Section 11. The objections to changing the weight of the silver dollar are entitled to serious consideration. (See section 15.)

Section 18. In reference to wastage, are two-thousandths enough to cover the melter and refiner's responsibility and risk? (See section 44 of revised bill.)

Add to section 21. Relative to the bullion fund, "Payments in advance may be made to the depositor under regulations established by the Director with the approbation of the Secretary of the Treasury." ("I doubt." FOLGER.) (See section 48.)

Section 24. In reference to paying all moneys into the treasury on charges and deductions from gold and silver bullion, add the following: "*Provided*, That all losses arising from the sale of 'sweeps' or from wastage shall be offset by the gains arising from any surplus of the precious metals in the settlement of the melter and refiner's and the coiner's accounts, (the balance being provided for from the account of incidental and contingent expenses,) for the purpose of keeping the bullion fund in tact." (See section 54 of revised bill.)

Section 32. After the word "fineness" insert the following, "or that of the deposits after melting," so that it shall read: "that, at the option of the depositor, gold or silver may be cast into bars or ingots of either pure metal or of standard fineness, or that of the deposit after melting, as the owner may prefer," &c. (See section 20 of revised bill.)

Section 35. In reference to nickel coinage, are not the present bronze coins preferable?

Section 44. In reference to officers of assay office in New York. The separation of the United States assay office from the independent treasury will secure direct, responsible supervision of the treasurer's department. By keeping distinct the offices of superintendent and treasurer, (or deputy treasurer,) the two act as checks on each other. The superintendent and the present melter and refiner have never had assistants. The salaries should be fixed by law. The other provisions, generally, of the act of 1853, establishing this office, seem appropriate. (See sections 55, 26 of revised bill.)

Section 55. In reference to the repeal of all acts inconsistent with the provisions of this act. Why the need of this action? The statute last passed always prevails. In whatever it is repugnant to a former statute it is the law to the exclusion of the former act; while a former clause of repeal may strike out parts of acts which it is not wished to do away with. (See section 71 of revised bill.)

Officers of branch mint at San Francisco to Secretary of the Treasury.

OFFICE OF SUPERINTENDENT UNITED STATES BRANCH MINT,
San Francisco, California, February 4, 1870.

SIR: Inclosed herewith please find copy of the "Bill revising the laws relating to the mints, and assay offices, and coinage of the United States," with such suggestions as have been agreed upon by the officers of this branch, written upon slips and pasted opposite the sections to which they respectively refer.

COINAGE CHARGE SHOULD BE REPEALED—FREE MINTAGE.

It will be observed that the officers of this branch are of the opinion that the seigniorage or coinage charge ought to be *entirely repealed* without reducing the weight of the coins; and further, that in the thirty fourth section of the proposed law, (with the exception of the treasurer,) they venture with great deference to recommend (on the suggestion of the able and experienced assayer of this branch) that the entire charge for refining bullion deposited for coinage be abolished, or in other words that the government confer upon the mining interests of the country the benefit of a free mint. Some of the general reasons for this recommendation may be briefly stated as follows:

1. It is believed that the policy of our government should tend to the retention of American bullion at home rather than allow the difference

between the mint charges of our own and foreign countries to operate as a premium to encourage its shipment abroad.

2. That such a modification of the law would to some extent stimulate mining enterprise, encourage an important but poorly paid branch of industry, and increase our annual product of the precious metals.

3. That this charge, by raising the mint value of bullion above its market value for shipment, would increase our coinage, swell the volume of specie in circulation, stimulate the exporting of other commodities than gold and silver, to adjust balances of trade, and in some slight degree facilitate the resumption of specie payments.

4. The entire cost of refining the total bullion product of the country, say thirty-six millions, would not exceed $200,000, and we hazard the opinion that the advantages to be derived would many times exceed that sum.

Very respectfully, your obedient servants,

O. H. LA GRANGE,
Superintendent.
O. D. MUNSON,
Assayer.
J. B. HARMSTEAD,
Coiner.
J. P. COCHRAN,
Melter and Refiner.

Amendments suggested by officers of San Francisco branch.

Section 3, article 2. The assayer, the melter and refiner, and the coiner of this branch mint desire to suggest that being responsible on their bonds for the integrity and efficiency of the employés in their several departments, they should be allowed to recommend such employés, subject to the approval of the superintendent.

The superintendent dissents on the ground that if thus practically deprived of the appointing of workmen he would have no power to enforce necessary regulations and maintain harmony between the several departments.

Section 3, article 3. Use the word "compute" instead of the word "estimate" in the ninth line of article 3, section 3; and strike out the word "superintendent" in the last line of same section. [Section 4 of revised bill.]

Section 5. Add: "In case of such absence of the superintendent he may designate his chief clerk to act in his place" [See section 9 of revised bill.]

Section 8. 1st. The operative officers at the San Francisco branch should receive at least $4,000. 2d. Wages allowed to workmen should be determined by the superintendent, subject to the approval of the Director. 3d. Insert the word "treasurer" after the word "superintendent" on the fourth line, and erase before "assayers" on fifth line. [See section 12.]

Section 9. Insert in last line in reference to alloy of silver the word "tenth" in place of "half." [See section 13 of revised bill.]

Section 11. Would not the proposed change in the weight of the silver dollar disturb the relative value of all our coinage, affect our commercial conventions, and possibly impair the validity of contracts running through a long period? Might not the dollar be retained as a measure

of value, but the coinage of the piece for circulation be discontinued [See section 15 of revised bill.]

Section 14. Strike out all after the words "shall be," in the ninth line, and insert: "Shall be defaced and delivered to the melter and refiner as standard bullion, to be again formed into ingots and recoined." [See section 41 of revised bill.]

Section 16. Provide for deliveries and accounting between treasurer and melter and refiner. [See section 43 of revised bill.]

Section 20. Erase the word "Director," and insert the word "superintendent" in fourth line. In the fifth line strike out "been brought to the mint," and insert "became fit for coinage." [See section 46 of revised bill.]

Section 21. In reference to bullion fund, strike out last line, and insert "may at any time increase or diminish such deposits." [See section 48 of revised bill.]

Section 22. Insert the word "fineness" after the word "standard," in the nineteenth line. [See section 49 of revised bill.]

Section 29. Should not purchases be approved by the Secretary of the Treasury as well as by the Director? Is not the reference to profits in this section inconsistent with the reduction in value of the silver dollar proposed in section 11? [See section 28 of revised bill.]

Section 34. Substitute the following, viz: "*And be it further enacted*, That the only charge by the mints to the depositors shall be as follows: For copper introduced for alloy, and for silver used for the alloy of gold for coinage; for casting bullion into unparted bars; and for making fine gold and silver bars. The rate of these charges shall be fixed for the several mints from time to time by the Director, with the concurrence of the Secretary of the Treasury, so as to equal, but not to exceed the actual expense to the mint for metals and labor in each case aforementioned: and bullion so base as to be unsuitable for the operations of the mint may legally be rejected by the treasurer." [See sections 25, 21 of revised bill.]

Superintendent of branch mint at San Francisco to Secretary of the Treasury.

OFFICE OF SUPERINTENDENT UNITED STATES BRANCH MINT,
San Francisco, California, February 7, 1870.

SIR: Permit me in addition to the general suggestions made by the officers of this branch, to say that personally I am earnestly in favor of any measure that can be secured, having a tendency to bring the cost of refining and coining bullion in this country into such a relation with the cost of those operations in other countries as will abolish the premium now practically paid to exporters of our uncoined gold and silver.

Very respectfully, your obedient servant,

O. H. LA GRANGE,
Superintendent.

Hon. GEO. S. BOUTWELL,
Secretary of the Treasury, Washington, D. C.

Assayer of branch mint at San Francisco to Secretary of the Treasury.

ASSAY OFFICE UNITED STATES BRANCH MINT,
San Francisco, California, February 11, 1870.

SIR: Allow me to ask your attention to the changes and additions herewith suggested to Section 18, in the "Bill revising the laws relative to the mints," &c., accompanying this.

The old law allows two-thousandths of the whole amount charged to these officers for wastage, and an officer has once assumed that he was entitled to all that he could save embraced within this allowance.

Is it not important, as the law is being changed, to provide against a repetition of such an assumption?

Respectfully, your obedient servant,

O. D. MUNSON.

Hon. GEO. S. BOUTWELL,
Secretary of the Treasury, Washington, D. C.

Assayer of branch mint at San Francisco to Mr. Knox.

ASSAY OFFICE UNITED STATES BRANCH MINT,
San Francisco, California, February 12, 1870.

SIR: I herewith submit the following suggestions to section 18, in reference to wastage, for your consideration:

In the eighth line substitute the word "accounts" in the place of "case."

In the ninth line strike out the words "and silver," and add after the word "gold," "and one thousandth of the whole amount of silver."

In the tenth line, after the word "settlement," add: "calculated separately;" also, substitute the word "account" for the word "case," in tenth line.

And in the last line, after the word "treasurer," add the words "calculated separately."

Something like the following, I think, should be added: "And if any bullion has accumulated in the hands of these officers by reason of the legal allowance for wastage, it shall be their duty to deliver the same to the treasurer, on an order from the superintendent, to be credited to the profit and loss account of the Mint." See section 14 of the revised bill.)

These alterations have presented themselves to my mind since our suggestions to the bill were forwarded.

Respectfully, and yours truly,

O. D. MUNSON.

JOHN J. KNOX, Esq.,
Deputy Comptroller, Treasury Department, Washington, D. C.

Assayer of the branch mint at Denver to Mr. Knox.

UNITED STATES BRANCH MINT,
Denver, February 7, 1870.

SIR: Your favor of the 22d ultimo, asking me to examine the new mint bill which was inclosed, and to make any suggestions that might occur to me, was received on the 4th instant.

In reply I would state that while I heartily concur in the general features of the bill, I will suggest that some parts of it be changed.

CHARGES OF THE ASSAY OFFCE.

Section 31 provides that the charges by mints and assay offices "shall be fixed so as to equal, but not to exceed in their judgment, the *actual expense* to the Mint of the materials and labor employed in each of the cases aforementioned." If you mean by this, that the charges in each institution are to equal the *total expenses*, including salaries, wages, &c., of that institution, then I think the charges are much too high; so high, in fact, that United States mints and assay offices will have but little to do. The amount received as charges at the mints and assay offices will not pay one-fourth of the expenses; and it is my opinion that the charges should be reduced still lower, instead of being increased. The fact that gold can be shipped out of the country to be coined at a profit, is evidence that mint charges in this country are too high. (See section 62 of revised bill.)

SALARIES OF OFFICERS AND CLERKS.

In section 59, relating to the Denver branch mint, it says: "And the assayer may employ two clerks and as many workmen and laborers, under the direction of the Secretary of the Treasury, not exceeding six in number, as may be required." This would be reducing the number of workmen and laborers in this institution nearly one-half, as we have ten on the pay-roll for workmen now, (including one day and two night watchmen.) The number specified in the bill is entirely too small, as six cannot do the work so as to allow deposits to be returned in time to satisfy the wants of this community. It has been the custom to return deposits the day after they are deposited here, and, as I said before, this could not be done if we were allowed but six workmen and laborers. We have also to consider that for the past three years the business of this branch has been steadily increasing, as the following statement will show. There were received in the fiscal year ending June 30, 1867, 180 deposits; in 1868, 493, and in 1869, 1,259 deposits, and the prospects are there will be a greater number of deposits this season than ever before.

It does not seem to me to be any more necessary to prescribe *by law* the number of workmen and laborers at this branch and at Boisé City, than at the New York assay office, Philadelphia Mint, or of the other mints. Why not allow this institution to be as useful as it may be by allowing the necessities of the case to govern the action of the Director and the Secretary of the Treasury, instead of making it necessary to get a special act of Congress to allow an increase of *even one* workman? The same may be said in regard to the number of clerks.

In the same section, the salary of the two clerks is not to exceed $1,800 each. I would suggest that the question of the salary for the clerks be left subject to the control of the Director and Secretary, the same as it is with the other mints. (See section 60 of the revised bill.)

Hoping that you will make the changes indicated, and thanking you for thus favoring me,

I have the honor to be, with great respect, your obedient servant,

JACOB F. L. SCHIRMER,
Assayer United States Branch Mint, Denver, C. T.

Hon. JOHN JAY KNOX,
Deputy Comptroller.

Solicitor to the Secretary of the Treasury.

TREASURY DEPARTMENT, SOLICITOR'S OFFICE,
March 31, 1870.

SIR: I have the honor to acknowledge the receipt of the draught of a "Bill revising the laws relating to the mints, assay offices, and coinage of the United States," referred to me, on the 27th of January last, by Hon. J. F. Hartley, Assistant Secretary, for examination, with special reference to * sections 40 to 43, inclusive, and to return the same, marked "A," with such alterations and amendments as I have thought necessary to be made.

I am, very respectfully,

E. C. BANFIELD,
Solicitor of the Treasury.

Hon. GEORGE S. BOUTWELL,
Secretary of the Treasury.

First Auditor to Secretary of the Treasury.

TREASURY DEPARTMENT, FIRST AUDITOR'S OFFICE,
February 10, 1870.

SIR: In compliance with your reference of a "Bill revising the laws relative to the mints, assay offices," &c., for examination, with suggestions and amendments, I respectfully submit the following remarks:

As far as I feel authorized to express an opinion, I consider the bill an important improvement upon the present system regulating the mints, as it simplifies, by reducing into one act, what is now embraced in several, with some complexity in their operations. Its provisions are so clearly expressed that they obviate the doubtful constructions in some of the existing acts, and leave the execution of the law exempt from divided opinions. The unity in the organization under this bill will facilitate the operations of the mints by bringing them under the authority of one Director, and thereby having a uniformity in all. It defines the duties of all the officers, and holds them to a proper accountability, in which is found the necessary protection of all the rights and interests, public and private, subject to their trust.

I think the bill might be improved by some alterations, which I have made in pencil, in some of the sections.

With these remarks and amendments I return the bill.

With great respect, your obedient servant,

T. L. SMITH,
Auditor.

Hon. GEORGE S. BOUTWELL,
Secretary of the Treasury.

* The recommendations of the Solicitor were adopted in the construction of sections 63 to 67 inclusive of the present bill.—J. J. K.

B.—CORRESPONDENCE RELATIVE TO THE BILL WHICH WAS TRANSMITTED BY THE SECRETARY OF THE TREASURY TO THE SENATE OF THE UNITED STATES ON THE 25TH OF APRIL, 1870.*

Hon. George Harrington, late Assistant Secretary of the Treasury, to Mr. Knox.

WASHINGTON, *May* 27, 1870.

MY DEAR SIR: Permit me to express the gratification with which I read your report with accompanying draught of a bill, intended to give effect thereto, upon the necessity of reorganizing our mint system.

NECESSITY OF REVISION AND REORGANIZATION.

There is no branch of the Treasury Department that has been so neglected as that of which your report treats, and none that so seriously requires revision; it was a want well known during the rebellion; but one that could not be attended to during that time. There is, in fact, no system as such, and no proper responsibility. Efforts have heretofore been made to effect reform; but they have been partial and unsatisfactory.

The obstacles to satisfactory legislation have been two-fold: First, that every attempt at investigation has been partial and superficial, manifest upon its face, and consequently has failed to convince Congress of any real necessity for remedial legislation; secondly, the animus of such investigations has not unfrequently been to engraft upon the system some idiosyncrasy of the author, which, not being responsive to the needs of the service, received no support from the intelligent expert: and hence failure.

Your report, I am glad to see, treats the subject in the broadest and most comprehensive manner, and your desire to improve the system is demonstrated by your calling to your aid those most familiar with its defects and most competent to suggest the proper remedy. Patterson, Peale, and Snowden I personally know are practically as well as theoretically familiar with the whole subject. A cursory examination of the bill is sufficient to commend it to any one at all conversant with mint affairs; its careful perusal demonstrates unmistakably the care and

* The bill was transmitted to the Senate accompanied by the following letter from the Secretary of the Treasury:

"TREASURY DEPARTMENT, *April* 25, 1870.

"SIR: I have the honor to transmit herewith 'A bill revising the laws relative to the mint, assay offices, and coinage of the United States,' and accompanying report. The bill has been prepared under the supervision of John Jay Knox, Deputy Comptroller of the Currency, and its passage is recommended in the form presented. It includes, in a condensed form, all the important legislation upon the coinage, not now obsolete, since the first mint was established, in 1792; and the report gives a concise statement of the various amendments proposed to existing laws, and the necessity for the change recommended. There has been no revision of the laws pertaining to the Mint and coinage since 1837, and it is believed that the passage of the inclosed bill will conduce greatly to the efficiency and economy of this important branch of the government service.

"I am, very respectfully, your obedient servant,

"GEO. S. BOUTWELL,
"*Secretary of the Treasury.*

"Hon. JOHN SHERMAN,
"*Chairman Finance Committee, Senate of the United States.*"

research with which the bill has been framed, and which, if enacted into law, will give to our mint establishment that unity so necessary to its advantageous and economical administration, and place it upon a par with those of the most advanced nations. I speak, as you are aware, from official knowledge of the disjointed condition of this important branch of our service to which I have given no little thought, and I cannot refrain from expressing to you the pleasure with which I perused your intelligent report and the provisions of the bill intended to give your views effect.

With great respect, yours,

GEO. HARRINGTON.

Hon. J. JAY KNOX,
Deputy Comptroller of the Currency.

Hon. W. E. Chandler, late Assistant Secretary of the Treasury, to Mr Knox.

WASHINGTON, D. C., *May* 15, 1870.

DEAR SIR: I thank you for sending me a copy of your report and proposed bill for a revision of the mint laws.

NECESSITY OF THE PROPOSED REVISION.

The necessity of such a revision has been apparent to every one connected of late years with the Treasury Department. The work has been admirably performed by you. You have happily secured and availed yourself of the suggestions of others, while impressing upon the codification that unity and completeness which can only result from the operations of one thoroughly informed mind. If the law is enacted it will result most beneficially.

The abolition of the coinage charge, and the adoption of the metrical system, with a view to an international system of coinage, are so clearly apparent that I cannot believe that Congress will delay action much longer.

I am much pleased with your report as a compendious statement of useful information connected with the coinage system. The table on page 26, showing the weight, fineness, and tolerance of all the United States coins, together with the amount in which such coins are legal tender, is especially valuable. I believe the very best results will follow from your work.

Very respectfully, yours,

WM. E. CHANDLER.

JOHN J. KNOX, Esq.,
Deputy Comptroller of the Currency.

Mr. Patterson to Mr. Knox.

PHILADELPHIA, *April* 29, 1870.

DEAR SIR: I have read your report in the North American of to-day, and cannot help dropping a line to express the satisfaction it gives me. All the points of reform appear to have been reached. Please send me a copy of the bill, also of your report, when officially printed.

I do not agree about abolishing the coinage charge. If we come to international coinage, I am satisfied that it will be insisted upon that the contracting parties shall have a uniform rate of charge, else all the coinage will be precipitated upon the country which works for nothing. We ought not to abolish what we will have soon to re-establish. However, I will not discuss that now.

Yours, truly,

R. PATTERSON.

JOHN JAY KNOX, Esq.,
Deputy Comptroller.

Commissioner of Mining Statistics to Mr. Knox.

OFFICE OF THE ENGINEERING AND MINING JOURNAL,
New York, May 28, 1870.

DEAR SIR: I have received the copy of your report on the proposed codification and reform of our mint laws, with the accompanying bill, and perused it with great interest. I regard it as a very thorough and well-considered paper, and I hope its recommendations will not fail of the attention at the hands of Congress which they deserve. The introduction of metrical weights and the door opened by your suggestions to the adoption of a perfectly metrical system of coinage, are features which especially commend themselves to me. I think these are true and practical steps toward a permanent international coinage, a consummation much to be desired, though not worth the sacrifice of our own almost perfect system, which some have over-hastily urged. Through all the debates on this subject which have taken place during the last three years it has been evident that the United States government, as such, had no positive opinion to present. It is time for us to have a mint bureau in the Treasury Department at Washington, with a chief, whose business it will be to study, understand, and definitely recommend the necessary measures in his department. I see reason to believe that the bill you propose will give us just this central, competent head; and therefore, if for no other reasons, I should be in favor of it.

Yours, truly,

R. W. RAYMOND.

JOHN JAY KNOX, Esq.,
Deputy Comptroller of Currency.

Chief coiner of the Mint to Mr. Knox.

MINT OF THE UNITED STATES,
CHIEF COINER'S DEPARTMENT,
Philadelphia, May 21, 1870.

MY DEAR SIR: I have delayed writing, as suggested by you, on the matter of allowances, &c., in the bill now before the Senate committee, for the reason that I expected to be in Washington and confer with you in person, which would be much more satisfactory. I find it impossible, however, to leave my post at the present time, and shall therefore have to content myself with this mode of communication.

As the Director of the Mint, who has its general supervision under charge, has discussed the bill in all its details before it was transmitted

to the Senate, I do not esteem it my duty, nor would it be courtesy to him or to my brother operative officers, to discuss, at this time, any of its provisions not having direct reference to the department under my charge. I shall therefore confine my observations to one or two points having reference thereto, and which, in my judgment, should be amended.

The principal of these is the allowance on single pieces and on deliveries in bulk, and my only object in taking exception to the allowances named in the bill is that I fear it will be very embarrassing, if not impracticable, to operate under its provisions.

The object in view by a small allowance on single pieces is to prevent, by carelessness or fraud, a coinage that would be below the standard weight. The main check upon this is in the allowance upon drafts, which should be made as close as can be consistent with the practical operations of the departments. Still, I think the allowances, as named in the bill, on deliveries in bulk are too close.

It is highly probable that the deliveries would be uniformly within even its restricted limits—they would certainly be, taking the workings of this department within the past year or two as a criterion—but under a large coinage it might occasion embarrassment, without any practical advantage.

We do not use in the receiving room, or in any department except in the assay department and adjusting room, so small a weight as the .005 or half-one hundredth of an ounce, and I can assure you it requires a very delicately constructed balance, large enough to use in the deliveries of coin, that will respond promptly under so small a weight; and in the adjustment of heavys and lights, preparatory to delivery, it requires the most delicate and careful manipulation to so combine the two as to come uniformly within so small an allowance.

As a matter of artistic skill it could be done, but our coinage establishments are manufactories, and rules that would operate where mathematical results can be had should not be applied to them.

I unite with you in the desire to see adopted the most stringent regulations for the prevention of fraud or criminal carelessness in all our minting establishments; but these rules should not be made so embarrassing as to become oppressive, nor should they, as in the allowance on single pieces, be made so as to be snares, liable to entrap an honest and faithful officer consistently discharging his duty.

An operative officer has to depend in a large degree (in spite of all watchfulness and care on his part) on the faithfulness, attention, and skill of those under him, as well as upon the accuracy of the machinery and appliances employed.

The least thoughtlessness, neglect, or want of skill in an adjuster, or accuracy in a balance, may pass a coin outside the legal limit, that would find its way into the pyx, and stand in judgment against him at the annual assay.

The commissioners, with but few exceptions, are unfamiliar with the operations of coinage, and if unfortunately the piece was light they might draw unfavorable inferences of an officer's capacity, if not his integrity, although the delivery out of which the piece was taken may have been of standard weight, and it is the only piece out of the legal limits.

This was the case in a delivery made a year or two since, when it was customary to weigh the coins before placing them in the pyx. One double-eagle was found to be one thirty second of a grain too heavy, and on an examination it was ascertained to be the only piece in the $400,000 composing the delivery that was not accurately within the le

gal limits. This occurred when the allowance was one-half a grain upon a single piece. This risk is increased in almost exact proportion as you reduce the allowance.

TOLERANCE ON SINGLE PIECES.

What practical good will result from the very small allowance named in the bill on single pieces? All that is desirable to be obtained is that the pieces shall conform, as near as may be practically convenient in the workings, to the standard weight.

The check is in the limitations and restrictions in delivery in bulk, as I before remarked. The allowance named in the bill on the three-dollar, quarter-eagle, and one-dollar piece, is, in my judgment, entirely too small.

As a matter of skill, we can adjust ten, one hundred, or one thousand of these pieces within the limits; but I assert unhesitatingly that in the every-day operations of coinage, with all the care and skill obtainable, there will be coins outside the legal limit where it is made so small.

You know that after adjustment the planchet must be milled and cleaned preparatory to coining. Allowance must therefore be made in adjustment for the loss in these operations. With a one-sixth, and certainly the one-twelfth, of a grain to go upon, it cannot be done on a large scale with unvarying certainty. And what is the penalty an officer is to suffer, under the bill, for any departure from this nice adjustment? The fact is to be reported to the President for such punishment as he may see fit to impose within the limits of disqualifying him from holding his office. The public, not understanding how trifling the error and how impossible to avoid it, will take up the whisper, and the reputation of an honest lifetime may be blasted. The operation of so close an allowance on single pieces would, I fear, only serve as a trap into which some faithful and honest officer might fall, without subserving any valuable end.

The act of the English mint, to which reference is made, has never been tried, and I assert, without fear of contradiction, that the "remedy allowance" on the silver penny and on one or two other coins, is not only impracticable but absurd, unless their machines for adjusting are far more accurate and reliable than any we have been able to obtain—human and mechanical—and I don't believe they are.

I consider their graduated "remedy allowance" as beautiful in theory but impracticable in the every-day manufacturing of money, and looks very much as if it had been proposed by some one who never handled a pair of balances or saw a planchet adjusted. I speak from long experience and observation, and very much fear, if the allowances named in the bill now before the Senate are not increased, the coining departments in our mints will be greatly embarrassed without any good results following. On invitation, I had a long interview on this subject with Mr. Robert Patterson, who was connected in an important relation with the Mint for nearly a quarter of a century. He fully agrees with me in all the details presented in the accompanying schedule, as does also Mr. Dubois, assistant assayer. Ample protection is given to the government and people, while at the same time the officers charged with the execution of coinage have a sufficient tolerance in the discharge of their duties.

TOLERANCE IN BULK.

I have named .01 ounce on all drafts in deliveries; it would be better if it were .02 ounce on all drafts of $5,000.

At present we can very well work within the .01 ounce, but in a great pressure it might be found embarrassing, without much advantage at any time arising therefrom.

I recommend that the allowances on dimes be made one grain, which will obviate the expense and delay of adjustments, while, as before stated, the limit on drafts in deliveries would prevent any evil arising from this increase of tolerance on the single pieces. (See sections 38 and 39 of proposed bill)

REDUCTION OF WASTAGE APPROVED.

I concur in the proposed reduction of the allowance for wastage named in the bill, as far as relates to this department. The allowance at present is unnecessarily liberal, and might be taken advantage of by an unfaithful officer. (See section 44 of revised bill.)

You deserve and should receive credit for the patient labor and ability manifest in the preparation of the bill, and I am exceedingly sorry that I cannot fully concur in all of its provisions, and especially in such of its details as I have indicated.

If, on examination, you agree in deeming it advisable to make the changes I have named, and which I believe to be important as relates to the coining departments of the several mints, please have the bill so amended while it is in the Senate committee.

At all events let me hear from you at your earliest convenience.

I am, with sincere respect, very truly, your friend,

A. LOUDON SNOWDEN,
Chief Coiner.

JOHN JAY KNOX, Esq.,
Deputy Comptroller, Treasury Department.

Allowance on single pieces.

GOLD.	Grains.	SILVER.	Grains.
Double-eagle	½	Half-dollar	1
Eagle	½	Quarter-dollar	1
Half-eagle	½	Dime, to save adjusting	1
Three-dollar	½		
Quarter-eagle			
Dollar			

Allowance on drafts.

GOLD.			SILVER.		
	Ounce.			Ounce.	
Double-eagle	.01	on $5,000	Half-dollar	.02	on $1,000
Eagle	.01		Quarter-dollar	.02	
Half-eagle	.01		Dime	.01	on $100
Three-dollar	.01	on $3,000			
Quarter-eagle	.01	on $5,000			
Dollar	.01	on $1,000			

TREASURY DEPARTMENT,
Washington, D. C., June 10, 1870.

DEAR SIR: In conformity with your request I have prepared, and give herewith, a statement of certain facts and views pertaining to the bill now before the Senate for the revision of the mint and coinage laws of the United States.

"TOLERANCE" OR "REMEDY" OF THE MINT IN DIFFERENT COUNTRIES COMPARED.

The first point to which I would call attention is a comparison of the rates of "tolerance" or deviation from the legal weight and fineness of coins allowed to the coiner in the mints of the United States and of certain other countries.

"TOLERANCE" OF FINENESS.—GOLD COINS.

The tolerance of fineness in excess or defect, as regards gold coins issued from the Mint of the United States under the existing laws, is 2 parts in 1,000; under the provisions of the new bill it would be 1 part in 1,000.

Under the existing laws, therefore, gold coins may not be issued from the Mint if the rate of fineness exceeds 902 thousandths, or fall short of 898 thousandths; under the provisions of the new bill the limits are 901 and 899 thousandths; the standard rate of fineness in either case being 900 thousandths.

In many of the countries of the world (as England, France, Belgium, Italy, Germany, Spain, &c.) the tolerance of fineness of gold coins, in excess and defect, is 2 per 1,000. In the Netherlands it is 1 per 1,000. In Denmark it is about $\frac{7}{8}$ (or 0,868) per 1,000. In Russia no rate of tolerance for fineness of gold coins is established. In Sweden the rate is 3 per 1,000, but the Director in Chief of the mint and assay office, in his communication to the Royal (British) Commission on International Coinage, states that "in fact the newly minted ducats are never defective to the extent of one-thousandth part in weight, and scarcely one-half thousandth part in fineness." In Great Britain the coinage act of 4th April, 1870, reduced the tolerance on gold coins from $2\frac{2}{12}$ to 2; and by the same act it is made "lawful for her Majesty, with the advice of her privy council, from time to time, by proclamation," "to *diminish* the amount of remedy" "in any coin."

ACTUAL DEVIATION IN THE FINENESS OF GOLD COINS.

The official annual assays of the coinage of the United States made in the years 1869 and 1870, shows, in respect to the gold coins and bars assayed in the year 1869, a deviation of 0.43 thousandths in defect from the standard, alike for the mints of Philadelphia and San Francisco, the average fineness for each mint being 899.87 thousandths. In the year 1870 the average of the assays of gold coins and bars in each of these mints show no measurable deviation from the standard, the average fineness being found to be 900 thousandths.*

According to the Journal des Debats of 13th November, 1866, the actual fineness of the French gold coinage was 898 and a large fraction; but according to the Moniteur, November 20, 1866, it was 899.6—both

* Manuscript reports of annual assay of the mint, 1869 and 1870.

being below the American average; the former considerably below, although within the limits of tolerance.

"TOLERANCE" OF FINENESS.—SILVER COINS.

In the case of silver coins the existing tolerance of fineness is 3 per 1,000, both in excess and defect. In the prepared bill the tolerance of silver coins is reduced to 2½ per 1,000.

In France, Belgium, Italy, and Switzerland the tolerance in the case of the price of 5 francs (silver) is 2 per 1,000; and in respect to all other silver coins of these countries the tolerance is 3 per 1,000. In Prussia the tolerance of silver coins is 3 per 1,000; in England it is 4 per 1,000. The rate proposed does not differ greatly from that of France.

ACTUAL DEVIATION IN THE FINENESS OF SILVER COINS FROM THE LEGAL RATE.

The actual deviation of United States silver coins from the legal standard as to fineness, as indicated by the annual official assays in 1869, was for the Philadelphia Mint 0.55, and for the San Francisco mint 0.25 thousandths in excess of the standard. In 1870 the silver coins and bars of the Philadelphia Mint which were assayed were 0.2 thousandths in excess; and the coins of the San Francisco mint 0.4 thousandths in excess of the standard, as will be seen from the following table:

Table showing the fineness of bars and coins of gold and silver issued by the mints of the United States at Philadelphia and San Francisco, according to official assays made at Philadelphia in February of the years 1869 *and* 1870.

Assay of 1869.	Fineness.		Deviation from standard.	
	Range.	Average.	Average in excess.	Average in defect.
GOLD.	*Thousandths.*	*Thousandths.*	*Thousandths.*	*Thousandths.*
Philadelphia Mint	899. 8 to 899. 9	899. 87	.....	0. 13
San Francisco Mint	899. 8 to 900	899. 87	.....	0. 13
SILVER.				
Philadelphia Mint	900 to 901	900. 55	0. 55	.....
San Francisco Mint	900 to 900. 6	900. 25	0. 25	.....

Assay of 1870.	Fineness.		Deviation from standard.	
	Range.	Average.	Average in excess.	Average in defect.
GOLD.	*Thousandths.*	*Thousandths.*	*Thousandths.*	*Thousandths.*
Philadelphia Mint	900 to 900	900	.....	.....
San Francisco Mint	899. 9 to 900. 2	900	.....	.....
SILVER.				
Philadelphia Mint	899. 8 to 900	900. 2	0. 2	.....
San Francisco Mint	899. 8 to 900. 8	900. 4	0. 4	.....

The legal standard of fineness, both of gold and silver coin, is 900 thousandths.

PRACTICABILITY OF A DIMINUTION IN THE RATE OF TOLERANCE OF FINENESS.

It is desirable that the tolerance of fineness, or the deviation allowed by law from the standard fineness, should be as small as practicable; and also that the deviation in excess or defect in one delivery should be compensated by a corresponding defect or excess in the next.

Although the rate of tolerance as to the fineness of gold coinage adopted in a large number of countries is 2 parts in 1,000, there is reason to believe that there is a tendency to narrow the range, and that to narrow it is feasible. A diminution of the tolerance as to fineness may be accomplished in one of two ways: either by diminishing it with respect to each mass of metal coined, or by requiring that the deviations in excess or defect from the legal standard of fineness, in different masses of metal which may be coined, shall nearly compensate.

The comparatively narrow range of tolerance of fineness adopted for coinage in the Netherlands and in Denmark, together with the result of assays in the United States and elsewhere, indicates that a diminution of the tolerance to 1 part in 1,000, as proposed in the bill, is feasible; and it is evident that the average of the deviation from the legal standard of several coinages taken together need not exceed a rate much smaller than this.

TOLERANCE OF WEIGHT IN SINGLE PIECES.—UNITED STATES TOLERANCE IN SINGLE PIECES GREATER THAN THAT OF LEADING COUNTRIES OF EUROPE.

As regards the tolerance of weight, or the deviation from the standard, which is allowed to the coiner, I observe, that with coins of smaller denomination than the double-eagle, the tolerance of weight, according to the laws of the United States, is considerably greater than the tolerance for coins of nearly corresponding value issued by the mints of France, England, and certain other countries.

For example, the tolerance of weight on the American gold eagle is one-half of a troy grain, equivalent to $32\frac{4}{10}$ milligrams, while the tolerance of the 50-franc piece of France (a coin of nearly equal value to the United States eagle) is only $16\frac{1}{10}$ milligrams; and that of English coin of two pounds sterling (also nearly equal to the eagle) $25\frac{9}{10}$ milligrams. Again, the tolerance on the United States half-eagle is $32\frac{4}{10}$ milligrams, while on the British sovereign it is only 13.0 milligrams; on the quarter-eagle 16.2 milligrams, but on the half-sovereign only $6\frac{1}{2}$ milligrams; on the United States dollar 16.2 milligrams, while on the gold 5-franc piece of France only 4.8 milligrams.

In the mint and coinage bill, now before Congress, the values proposed for tolerance of gold coins are nearly in harmony with those adopted by France, Belgium, Italy, and Switzerland; and there appears to be no sufficient reason for so wide a range of deviation from the standard weight of coins as that permitted by the United States statutes.

With regard to our silver coins, as in the case of our gold coins, the tolerance or legal deviation from the standard is greater, in general, than with the silver coins of Europe. For instance, the tolerance in the case of the silver dollar of the United States is 97 milligrams, while with the five-franc piece of France it is only 75 milligrams. The tolerance in the case o the half dollar of the United States is also 97 milligrams, while that of the two-shilling piece of Great Britain is but 47 milligrams. The tolerance of the quarter dollar of the United States is 65 milli

grams, while that of the shilling of Great Britain is somewhat less than 24 milligrams. The tolerance of the dime is 32 milligrams, that of the half franc 17½ milligrams.

The tolerance proposed in the bill for the silver coins of the United States is not materially changed from that of the existing law. It is somewhat less in the case of the half dollar, and is the same with respect to the quarter dollar and dime.

RELATION BETWEEN THE TOLERANCE OF WEIGHT AND THE WEIGHT OF COINS.

It is a principle sufficiently well established, that the amount of "tolerance" of weight should have some definite proportion to the weight of the coin, and also to the weight of a mass of coins when delivered in bulk. The absolute deviation allowed to the coiner should be less on small pieces than on large; less on small deliveries of coin in bulk than on large; less on a small number of equal pieces than on a large number. A simple approximate rule, and one favorable to the coiner, would be to proportion the tolerance, or deviation alluded to, to the square root of the weight of the coin issued, whether singly or in bulk.

The tolerance for silver coins adopted in the United States is proportionately larger than the tolerance for its gold coins; for the alleged and sufficient reason that, while the weight of the gold coins is adjusted by hand, the weight of the silver coins receives no adjustment other than that given by machinery, and is, in consequence, less exact. It is, however, questionable whether the disparity between the rates of tolerance on gold coins and those of silver coins may not be too great; the latter being relatively about *four* times as great as the former.

The tolerance in the case of the coins of France, both gold and silver, bears some approximate relation to that of the rule above given of proportioning the tolerance to the square root of the weight; the proportionate tolerance of the silver coins of France, however, being in general about *two and one half* times as great as that of the gold coins.

The rate of tolerance in the smallest coins, both of gold and silver, which would correspond to the square root of the weight, is somewhat larger than the rates adopted for the mints of France and Great Britain.

In the case of the five-franc piece of gold the tolerance of the French mint is smaller relatively than that demanded by the square root of the weight, the former being 4.8 milligrams, (or 3 per 1,000,) and the latter about 7.5, (or 4½ per 1,000.)

The deviation allowed on the one-dollar piece should not be so large as on the twenty dollar piece, nor so small as one-twentieth of the latter, but should be about one fifth of the deviation allowed on the piece of $20. If the deviation allowed on the twenty-dollar piece is in the very reasonable proportion of 1 per 1,000, the deviation on the part of the dollar should neither be *one* part per thousand nor *twenty* parts per thousand, but some value intermediate, (approximating the square root of 20,) as 4½ parts per 1,000, (or 7½ milligrams.) This proportion for the dollar-piece is somewhat larger than that proposed in the bill, ($3\frac{23}{100}$ per thousand, or $5\frac{4}{10}$ milligrams,) and larger than that of the French gold piece of five francs, (3 per thousand, or 4.8 milligrams,) but it is much smaller than that of the United States dollar under the law now in force, (to wit, $9\frac{7}{10}$ per thousand, or 16.2 milligrams.)

The following statement, from the report of John Quincy Adams when Secretary of State, relative to the Mint of the United States when first established, is of interest:

In the coins of the United States there is no allowance for what is called the

remedy of weight, but assays of all coins issued from the mint are made, and if any of them are found inferior to the standard prescribed, to the amount of more than $\frac{1}{4}$ part, the officers of the mint by whose fault the deficiency has arisen are to be dismissed. This provision was adopted from what was stated in Mr. Hamilton's report to be the practice of the mint in England.

A carefully prepared table is appended, comparing the tolerance or remedy of weight, existing and proposed, of the gold and silver coins of the United States with those of Great Britain, France, Belgium, Italy, and Switzerland, and with the rates demanded by the theoretical law above stated. (See inclosure No. 2.)

COIN WEIGHINGS.

To apply, in practice, the tolerance proposed by the bill, even of the coins of the smallest weight, ought not, with proper scales and other appliances, to be a matter of difficulty. In the Mint of the United States we ought to be able to, and very probably do, weigh coins with a nicety that will favorably compare with weighings in European mints. In the annual reports of assay at the Mint, I observe the deviations in the weighing of single coins are given to the one-sixteenth of a grain. The smallest tolerance called for in the mint and coinage bill is one-twelfth of a grain, and the smallest deviation demanded on the assumption that tolerance shall be proportioned to the square root of the weight of the coins would be about one-eighth of a grain.

On the subject of the limits within which it is practicable to note deviations from the standard weight of the smaller coins, I inclose an important communication from Dr. B. F. Craig, chemist of the bureau of the Surgeon General, and who has paid special attention to weights and balances. (See inclosure No. 1.) According to this communication, deviations of a single milligram (or about one-sixtieth of a grain troy,) may, with proper balances, be readily ascertained.

TOLERANCE OF WEIGHT IN BULK.

As an additional guard to the public in securing uniformity in the weights of its coins, and conformity to the legal standard, the United States law very properly establishes a rate of tolerance of weight when a large number of pieces are delivered in bulk, much narrower than the rate imposed on coins taken singly. Certain countries of Europe (as Denmark, Spain, and, prior to the act of April 4, 1870, England) have legal provisions of a somewhat similar character. In Denmark, a deviation in defect of one delivery of coins is required to be compensated for by a deviation of equal amount in excess in the next delivery. Tolerance in bulk under the new bill is considerably smaller than under the existing law: the rates in the former being from about one-fourth to one-ninth the value of those in the latter. In the new bill the deviation in the case of deliveries or drafts of $5,000 is fixed at $\frac{12}{1000}$ of an ounce. This is the case with double eagles, eagles, half eagles, and quarter eagles. When the "drafts" or deliveries are of the amount of $3,000, (as in the case of the three-dollar coins,) the tolerance is fixed at a somewhat lower limit, to wit, at three-fourths of the above amount; and when the "draft" is of the value of $1,000 (as in the case of the one-dollar gold piece) the tolerance is fixed at one-half of the first-mentioned amount, to wit, $\frac{6}{1000}$ of an ounce—the principle being recognized that the smaller "draft" demands a somewhat smaller tolerance, but not smaller in full proportion to the reduction in the "draft." The propor-

tional tolerance of weight of gold coin in bulk proposed in the bill is from $\frac{1}{30}$ to $\frac{1}{50}$ of the tolerance proposed on single pieces.

LIMIT OF WEAR.

Neither the existing law nor the proposed establishes a limit of wear or a value below which coins will cease to be current. In France the limit of wear is five-thousandths below the lower limit of tolerance. In England the least current value of coins is six and a fraction (6.0412) thousandths below the standard weight of coins. In some countries of Europe the lower limit of tolerance is, at the same time, the limit of wear; as in the case of the German gold crown, two and one-half thousandths is at once the tolerance and the limit of wear.

A section on this subject fixing the limit of wear at a point not greatly exceeding the rate of tolerance is desirable; say, a limit of wear not exceeding the tolerance by more than one-fourth.

REDEMPTION OF MINOR COINS.

In Prussia provision is made for the regular redemption of minor coins at their full nominal value. Provision is also made for the conversion at par of small coins into larger when presented in sums not less in case of small silver coins than 20 thalers or 40 gulden, (say $15 United States gold,) and in case of copper coins in sums not less than 5 thalers, or 10 gulden, (say $3 75 United States gold.)*

The section of the bill relative to the redemption and exchange of the minor coinage is therefore supported by weighty precedent.

ABOLITION OF TROY WEIGHT IN THE MINT.

A commission of eminent men in Great Britain, appointed by authority of the Queen, has, as you are aware, within a few months unanimously recommended the abolition of troy weight for all purposes pertaining to the government, and especially as regards the operations of the Mint. This recommendation will doubtless soon receive the favorable action of Parliament, and then the United States will be almost the only one of the great powers of the world that will employ for the purposes of the Mint other weights than the metric.

I would urge that the present opportunity should not be lost for abolishing, by the provisions of the mint and coinage bill, the use of troy weights in our Mint. I think no objection will be raised to this

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* GERMAN COINAGE CONVENTION (MÜNTZVEREIN) OF JANUARY, 1857.

ART. 14, (part of.) No one in the countries of the contracting powers shall be required to take in small coin a payment equal to the smallest of the larger coins.

ART. 15. Each contracting power engages—

a. Never to reduce the settled value of its own silver and copper small coinage, and only to permit its being withdrawn from currency after a space of time of at least four weeks has been fixed for its redemption, and publicly proclaimed at least three months before its expiration.

b. When, in consequence of length of circulation and wear, the impression on such coins has become indistinct, to call them in by degrees for remitting at the same value at which they were put in circulation.

c. And also to change the small coinage of every kind, if required, for the large currency of the country, at certain of their pay offices to be indicated.

The sum fixed for exchange, however, must, with regard to silver small coins, not amount to less than 20 thalers or 40 gulden, and, with regard to copper small coins, to less than 5 thalers or 10 gulden.

change from any quarter. It seems to me important that it should be pressed upon the attention of Congress. This change being effected, the establishment of a simple relationship between the weight of coins and the metric weight will naturally and readily follow. [See tables on pages 26, 28, 30, and 32, in Senate Mis. Doc. No. 132.]

STAMPING WEIGHT AND FINENESS ON COIN.

It is desirable that the weight and fineness of coins be stamped on all coins of gold and silver. I would respectfully suggest that the following section on this subject be substituted for section 19 of the bill:

SEC. 19. *And be it further enacted*, That upon the coins of the United States there shall be the following devices and legends: Upon one side of each of said coins there shall be, in addition to the inscription United States of America, and the date of the coinage, an impression emblematic of liberty; and upon the reverse there shall be a designation of the value of the coin, a statement of its weight and fineness, and such other descriptive inscriptions as the Secretary of the Treasury shall hereafter direct.

THE SILVER DOLLAR—ITS DISCONTINUANCE AS A STANDARD.

The bill proposes the discontinuance of the silver dollar, and the report which accompanies the bill suggests the substitution, for the existing standard silver dollar, of a trade-coin of intrinsic value equivalent to the Mexican silver piaster or dollar.

If the existing standard silver dollar is to be discontinued, and a trade-coin of different weight substituted, I would suggest the desirableness of conforming to the Spanish-Mexican, silver, pillared piaster of 1704, in preference to that authorized by the Spanish law of 29th 1772, or by the Mexican law of 27th November, 1867.

The first-mentioned of these coins, that of 1704, contained, as nearly as may be, according to English assays, a weight of pure silver equivalent to 25 grams. The last-mentioned, that of 1867, and which is intended to be equivalent to that of 1772, contains of pure silver 24.441 grams. The existing silver dollar of the United States contains 24.056 grams (*i. e.*, 371¼ troy grains) of pure silver.

In the year 1704, by proclamation of Queen Anne, based on assays at the English mint, the Spanish and Mexican *pieces of eight* (or dollars) were declared to be each of the value of *four* shillings and *six* pence sterling. At this time, and until the year 1816, sixty-two shillings could be coined from a troy pound of standard silver, $\frac{111}{120}$ fine; consequently, the dollar of 4*s.* 6*d.* sterling was equivalent in value to 386.71 troy grains, or 25.059 grams, of pure silver. Of these dollars, there would of course, be, four and four-ninths, in a pound sterling, (silver standard.) The sterling *par of exchange* from that time to the present day has been one pound sterling, equal to four dollars and four-ninths of a dollar although silver has ceased to be a standard in Great Britain, and has practically ceased to be a standard in the United States, gold taking its place. This dollar, divided into six shillings, became thenceforth the standard of lawful money in the American colonies of Great Britain.

By act of the Congress of the Confederation, passed 8th August, 1786, and by the ordinance of 16th October, 1786, a silver dollar was established as a unit of account, although *not coined*, containing of pure silver 375.64 troy grains, (or 24.338 grams.) This unit differed—as has been been clearly pointed out by John Quincy Adams, in his able report as

Secretary of State, in 1821, "on weights and measures"—from the true dollar of 1704 as defined by the proclamation of Queen Anne, by a deduction of two per cent. for estimated wastage in coining, and by assuming the fineness of the metal to be $\frac{1}{12}$, whereas the fineness of standard British silver was then, as now, $\frac{11}{12}\frac{1}{0}$.

The law of 2d April, 1792, of the new Congress, which established the Mint of the United States, also fixed the contents of pure silver in the standard silver dollar at 371¼ grains, (or 24.056 grams,) a reduction of 4 per cent. from the standard established by proclamation in 1704, and of 1½ per cent. from the dollar prescribed in 1786 by the Congress of the Confederation.

This dollar (unlike the preceding) is not based on the Spanish-Mexican dollar of 1704, but on the Spanish-Mexican dollar of 1772, from which it was derived by weighing of a large number of such coins as found in actual circulation, and consequently considerably reduced by abrasion, nearly 1.6 per cent., below the standard at which they were issued from the Mexican mint.

The weight of pure silver in the dollar has continued unchanged from that time to the present, although the standard weight of the coin itself, reduced by a withdrawal of 3½ grains of alloy, has been somewhat diminished.

It appears, therefore, that the existing silver dollar, although professedly based on the Spanish or Mexican silver dollar, does not fairly represent any coin ever issued from those mints; that it is merely a representative of the average of abraded Spanish-Mexican coins.

The coins most in demand for oriental commerce were for many years the pillared Spanish-Mexican piasters; and such was their popularity that they continued to be preferred long after their intrinsic value had been considerably reduced by wear in use. The restoration, as a trade-coin, of a silver dollar, approximating to the old standard, to wit: one containing 25 grams of *pure* silver, is a subject which would seem to demand favorable consideration.

It may be well here to call attention to the fact that the French silver coin of five francs contains, of *standard* gold, $\frac{9}{10}$ fine, just 25 grams, which also is the weight proposed for two half-dollars of the token or subsidiary coinage of the United States, in case that a metric coinage is adopted. (See Table III. pp. 30 and 31, Appendix to Report on the Mint and Coinage Bill.) The intrinsic value of the proposed *subsidiary* coinage would therefore be less by just one-tenth than that of the *commercial* silver coin here proposed.

Yours respectfully,

E. B. ELLIOTT.

JOHN JAY KNOX, Esq.,
Deputy Comptroller of Currency,
United States Treasury Department.

[Inclosure No. 1.]

WAR DEPARTMENT, SURGEON GENERAL'S OFFICE.
Washington, D. C., June 24, 1870.

DEAR SIR: I have received a note from you asking for my views of the practicability of establishing certain limits of tolerance for the deviation of gold coins from their standard weight, the proposition being, as I understand, to reduce the limits heretofore allowed in the United States mints, and to require closer weighing in the future.

I cannot speak as to the ease or difficulty of *making* coins of an exact weight, or of testing them by *machine* weighing, but only on the particular subject of testing by *hand* weighing.

A good assay balance will weigh a single coin to within $\frac{1}{10}$ of a milligram, or $\frac{1}{650}$ of a grain, but this is an accuracy which involves trouble in the attainment, and to come within a milligram is near enough for most purposes, and is as near as is commonly attained in chemical weighings.

When two weights, not exceeding two or three ounces each, and not differing from each other by more than ten or twelve milligrams, are counterpoised against each other on a proper form of balance, their difference may be estimated to within one, or at most to within two milligrams, according to the amount of difference, by observing the deflection of the pointer, without the necessity of adding weights to either side.

To come to the practical point, I am of the opinion that with a balance specially adapted to the purpose, the weight of a coin could be determined to within a milligram about as quickly as to within any other limits, the work being done under suitable arrangements. In weighing rapidly, however, errors as great as two milligrams would occasionally occur, and coins which seem to approach the limits on either side by nearer than two milligrams would require a more deliberate weighing; and the limits allowed should be such that the greater part of the coins made should be two milligrams within the extreme on either side.

With regard to the weighing of amounts of gold coin of $1,000 and upward, it may be remarked that it is possible to weigh them to within their one-millionth part, but that such accuracy cannot be relied on, as two good weighings of the same body will very often differ by more than one-millionth, and an approximation to the exact weight closer than the hundred-thousandth part ought not to be expected in anything but scientific work. Errors of one fifty-thousandth, or twenty parts in a million, ought, I think, to be tolerated, but beyond that limit, any desired amount of accuracy may reasonably be demanded.

The opinions which I have expressed are founded upon experience with Becker's balances, which are the ones most used in this country for the weighing of bullion, and are, perhaps, the most convenient and manageable balances made.

There is a balance made by the Coast Survey Office on an old-fashioned plan, which is often seen in government establishments. This is only suited to the particular purpose of adjusting weights, and when used for ordinary purposes it requires trouble to attain with it an approximation to accuracy.

Yours truly,

B. FANEUIL CRAIG.

E. B. ELLIOTT, Esq.,
Treasury Department.

[Inclosure No. 3.]

Tolerance or remedy of the mint in Great Britain, both as to weight and fineness.

	Prior to the act of April 4, 1870.		Under the act of April 4, 1870.
	In a pound troy.		In each coin.
GOLD.	*Grams.*	*Thousandths.*	*Thousandths.*
Fineness	15	2 29-48	2
Weight	12	2 1-12	1⅜ (or 1. 6224)
SILVER.			
Fineness	24	4 1-6	4
Weight	24	4 1-6	4 1-6

Under the act of April 4, 1870, "it shall be lawful for her Majesty, with the advice of her privy council, from time to time, by proclamation, to diminish the amount of remedy allowed by the first schedule to this act in the case of any coin."

The limit of wear, or the least current weight of gold coins, is 6.0412 per 1,000.

Legal tender: Gold coin, when not below the least current weight, is a legal tender to any amount: silver coins, in sums not to exceed 40 shillings. (about $10:) bronze (or copper) coins, new law, in sums not to exceed 1 shilling.

[Inclosure No. 2.]

Table comparing the "Tolerance," (or "Remedy,") existing and proposed, of the Mint of the United States in the weight of its gold and silver coins with that of certain countries of Europe: and also with computed values approximately proportioned to the square root of the weights of the coins.

In the columns of computed or theoretical values the tolerance assigned to the silver coins is proportionately two and a half times as large as that assigned to the gold coins.

Metal.	Denominations of coins, (approximate equivalents.)			Tolerance or deviation from the standard allowed to the coiners in the weight of single pieces.											Tolerance in the weight of large numbers.		
				Expressed in milligrams.						Expressed in thousandths.							
				United States.			France, Belgium, Italy, Switzerland, &c.	Great Britain, (law of April 4, 1870.)	*Theoretical.	United States.			France, Belgium, Italy, Switzerland, &c.	Great Britain, (law of April 4, 1870.)	*Theoretical.	Proportion per 100,000. United States.		
	United States.	France, Belgium, Italy, Switzerland, &c.	Great Britain.	Existing law.	Proposed in the bill.	Metric proposition.			$10\sqrt{\frac{1}{8}\text{ W.}}$	Existing law.	Proposed in the bill.	Metric proposition.			$\frac{10}{\sqrt{3\text{ W.}}}$	Existing law.	Proposed in the bill.	Metric proposition.
Gold			Five pounds					64.8	37.3						0.89			
	Double eagle	100 francs		32.4	32.4	33⅓	32.3		33.3⅓	0.97	0.97	1.00	1		1.00	14.0	3.72	4
	Eagle	50 francs	Two pounds	32.4	24.3	25.0	16.1	25.9	23.6	1.94	1.45	1.50	1	1⅝	1.41	18.6	3.72	4
	Half eagle		Sovereign	32.4	16.2	15.0		13.0	16.7	3.88	1.93	1.80		1⅝	2.00	27.9	3.72	4
		20 francs					12.9		14.9				2		2.24			
	Three dollars			16.2	10.8	12.0			12.9	3.23	2.15	2.40			2.58	31.0	4.65	5
	Quarter eagle		Half sovereign	16.2	10.8	10.0		6.5	11.8	3.88	2.58	2.40		1⅝	2.83	27.2	3.72	4
		10 francs					6.5		10.5				2		3.16			
	Dollar	5 francs		16.2	5.4	5.0	4.8		7.5	9.69	3.23	3.00	3		4.46	46.5	9.30	10
									$25\sqrt{\frac{1}{3}\text{ W.}}$						$\frac{25}{\sqrt{3\text{ W.}}}$			
Silver			Crown					117.8	79					4 1-6	2.6			
	Dollar	5 francs		97.2			75.0		72½	3.64			3		2.9	23 3-11		
			Half crown					58.9	56					4 1-6	3.7			
	Half dollar		Florin	97.2	64.8	62.5		47.1	51	7.81	5.21	5.00		4 1-6	4.1	37½	2½	2½
		2 francs					50.0		45¾				5		4.6			
	Quarter dollar		Shilling	64.8	64.8	62.5		23.6	36	10.42	10.42	10.00		4 1-6	5.8	50	2½	2½

	1 franc					25.0		32¼				5		6.5			
		Sixpence					11.8	25¼					4 1-6	8.2			
Dime	½ franc		32.4	32.4	50.0	15½		22½	13.02	13.02	20.00	7		9.2	62½	12½	10
		Fourpence					7.8	20½					4 1-6	10.2			
		Threepence					5.9	17¼					4 1-6	11.8			
Half dime			32.4					16½	26.04					12.9	125		
	1-5 franc	Twopence				10.0	3.9	14¼				10	4 1-6	14.5			
		Penny					2.0	10½					4 1-6	20.0			

[1] In the vertical values in this table are computed on the approximately correct assumption that the United States double eagle, *four* pounds sterling, and *one hundred* gold francs are equivalent to each other, and to 30 grams of pure gold, or 33⅓ grams of standard gold, nine-tenths fine.

The symbol *W* denotes the Weight of the coin, in grams.

Dr. M. F. Bonzano, late melter and refiner at branch mint, New Orleans, to Mr. Knox.

NEW ORLEANS, *June* 1, 1870.

MY DEAR SIR: I had the pleasure of receiving, under your frank, your report in relation to a revision of the laws pertaining to the Mint and coinage of the United States.

METRICAL SYSTEM OF WEIGHTS APPROVED.

I am much pleased to perceive that you propose to introduce the French system of weights into the new bill, a step in advance which cannot fail to meet the approbation of those charged with the responsible duties of conducting the operations of the Mint, and of the public at large. (See page 11 of report Senate Mis. Doc. No. 132, 41st Congress, second session.)

MINT BUREAU.

The establishment of a Mint Bureau has become an undeniable necessity since the operations of the Mint cover so large a field. The old system, has, in truth, worked well enough with only one or two branch mints of insignificant business, but with the constant increase of production of precious metals, a corresponding increase of the importance and business of the Mint and its branches, and the inevitable distribution of these branches to the very extreme limits of the country, the necessity of having the general business of the Mint and coinage under an officer near the other bureaus of the treasury, and in constant communication with the Secretary, should, I think, be readily appreciated by those familiar with the transactions of the Mint.

PROVISIONS AS TO WASTAGE AND TOLERANCE APPROVED.

The provisions of the bill in relation to wastage, tolerance, &c., are based upon the practice of the best minting establishments of the civilized world and our own experience. They are fair and just, and competent mint officers will find no difficulty in complying with them.

THE BILL GENERALLY APPROVED.

Viewing the bill as a whole, I am of opinion that it will be found a great improvement on the old laws, and will stand for a long series of years before the necessity for any change will arise.

The thanks of every one capable of appreciating the importance of the subject of your report will certainly be your reward for the minute, thorough, and exhaustive examination you have given to this important matter, and the direct and fair manner in which you have dealt with the deficiencies of the old laws, which experience had shown were no longer adequate to maintain the mint establishment of the United States at the same high standard of excellence as in some other countries, and of sufficiently protecting the interests of the government.

Very truly, yours,

M. F. BONZANO.

JOHN JAY KNOX, Esq.,
Deputy Comptroller of the Currency, Washington, D. C.

Superintendent of United States assay office at New York to Mr. Knox.

UNITED STATES ASSAY OFFICE,
New York, June 3, 1870.

SIR: Your letter, asking me to examine and comment upon the bill for the reorganization of the Mint, &c., which you kindly forwarded to me, and to procure also the opinions of the officers of this institution upon it, has been received.

In accordance with your request I have referred the bill to Dr. Torrey, assayer, and Mr. Mason, melter and refiner, who are now making the desired examination, and hope to be able to report their views by the first of next week. They deem it necessary to take this amount of time in order to give to the bill the careful consideration its importance seems to demand.

My own connection with the assay office has been so short that, with every disposition to aid with advice or suggestions, I do not feel at liberty to venture an opinion either for or against any of the proposed changes. That I must leave to those more familiar with the working of the present system.

Very respectfully, yours,

THOMAS H. ACTON,
Superintendent.

JOHN JAY KNOX, Esq.,
Deputy Comptroller of the Currency, Washington, D. C.

Assayer of United States assay office at New York to Mr. Knox.

UNITED STATES ASSAY OFFICE,
New York, June 10, 1870.

DEAR SIR: I have made a careful examination of the "Bill revising the law relating to the Mint, assay offices, and coinage of the United States," and, except in one or two particulars, have no objection to its provisions.

It is proposed to discontinue the office of treasurer, which I have always thought was necessary as a check on the superintendent. There has been such an office in the Mint and at San Francisco from the time that these institutions were organized, and a treasurer is equally necessary in the assay office.

Perhaps it would be well to provide more specifically for the assistants of the operative officers than is now done.

I think, also, that a provision in section 20 of your bill should be altered, to read, (last line,) "and the value shall be stamped on the same." As a whole, the bill seems to include every important provision contained in the existing laws upon these subjects, and, although I might prefer to have a few other sections modified, I give my full consent.

Yours, truly,

JOHN TORREY,
Assayer.

JOHN JAY KNOX, Esq.,
Deputy Comptroller of the Currency, Treasury Department.

Superintendent of United States assay office at New York to Mr. Knox.

UNITED STATES ASSAY OFFICE,
New York, June 21, 1870.

SIR: I send inclosed a communication from Mr. Andrew Mason, our melter and refiner, in regard to the proposed Mint law. Without expressing an opinion either way, for the reasons given in my former note, I hope you may find its suggestions valuable in perfecting the details of the new bill.

Very respectfully, yours,

THOMAS C. ACTON,
Superintendent.

JOHN J. KNOX, Esq.,
Deputy Comptroller, Washington, D. C.

Melter and refiner of United States assay office at New York to Mr. Acton.

UNITED STATES ASSAY OFFICE,
New York, June 18, 1870.

DEAR SIR: Having expressed my views on the subject to the department, in a communication dated January 27, through Hon. Charles J. Folger, treasurer, &c., allow me simply to comment on such points as impress me in the proposed bill "revising the laws relating to the mints," &c., in response to the request of John Jay Knox, esq., Deputy Comptroller.

Section 1. If the policy hitherto suggested, of concentrating the existing minting establishments into a lesser number, should be adopted, it would seriously modify the argument for a special Mint Bureau in Washington. The supervision by the auditing officers should undoubtedly be careful and rigid in any event.

Section 3. Whether the proposed union of the office of superintendent and treasurer in one would work better than the existing one between the treasurer and United States assistant treasurer, is doubtful. While want of proper scrutiny and watchfulness by officers under the present system may lead to evil results, the same causes will produce the same effects under the proposed alteration. The difficulty in examining the melter and refiner's account would be the same in either case.

The provision contained in section 4, that all employed in the different departments shall be recommended and nominated in writing by the respective officers is but a proper extension of the principle already enacted by law for one of them (treasurer's.) The approval of bills belonging to each department by the officer thereof should be required before payment.

Section 6. The word "standard" should be omitted before "bars or disks."

Section 13. In present practice the proportion of silver in the alloy of gold coin rarely reaches one-tenth, but as it is not profitable to refine gold of a very high fineness, (over .975,) and such might be largely deposited, the wisdom of limiting the proportion absolutely to one-tenth is questionable.

Section 15. The retention of the silver dollar, as at present issued, affords a standard of valuation for silver, and the demand for it at the regular coinage charge indicates its usefulness otherwise.

Section 17. The present bronze cent is thought by many to be preferable to a copper-nickel one, and it seems useless to change it at a heavy expense.

Section 20. Depositors prefer to have the *value* stamped on their bars—both gold and silver.

Sections 21, 27, 28, and 29. The first is inconsistent with the second, in stating that any owner of "gold and silver bullion may deposit," &c., "to be formed into *coin* or bars for his benefit;" and generally, there would be practical difficulties in the *two* modes of paying for silver. The present method is uniform, and the limit at which small silver coin is a legal tender is a natural and sufficient check to redundancy.

Section 24. The words "bars or coin" should be substituted for "standard metal fit for coinage."

Section 25. The charge for copper alloy is covered by the present coinage charge. While depositors are subject to a charge for making fine bars, &c., there can be no valid reason for furnishing coin (a much more expensive work) without one. A reasonable charge will regulate the supply to the people generally, while the owners of bullion will be accommodated by the government honoring its own stamp on bars, by receiving them on deposit at their coin valuation, on an equal footing with coin.

Section 44. While, under ordinary circumstances, the reduced margin for wastage in the melter and refiner's account would be amply sufficient, it is questionable whether a faithful officer should be personally subject to the increased risk.

Section 47. The propriety of *coining* by contract may just as well be considered as of *refining* by contract, which is proposed substantially. If it is unadvisable for the government to refine bullion, the simple arrangement would be to decline receiving unrefined bullion on deposit.

There should be some provision for assaying samples of gold and silver not intended for deposit, at a proper charge.

The experience of the officers of the Mint will enable them to give a general review of the bill; but I shall be glad if the foregoing suggestions can be of any service in the full consideration of this important subject.

Very respectfully,

ANDREW MASON,
Melter and Refiner.

THOMAS C. ACTON, Esq.,
Superintendent, &c.

Superintendent of branch mint at San Francisco to Mr. Knox.

OFFICE OF SUPERINTENDENT UNITED STATES BRANCH MINT,
San Francisco, California, June 5, 1870.

SIR: In reply to yours of 20th ultimo, I have to say that your letter, together with the accompanying proposed bill revising laws relative to mints, assay offices, and coinage, was submitted to the operative officers of this branch, and it was agreed that each should address you a note under his own hand giving his views in relation to the proposed reforms.

METHOD OF EMPLOYING WORKMEN.

For myself I can only say with great deference that I still entertain serious apprehensions in regard to the proposed change in the method

of employing workmen, and fear that under some circumstances it might result in collisions between departments, and under others in collusions between operative officers and employés to the injury of government. I should hesitate to recommend that the superintendent be called upon to perform the duties of treasurer without some check in the way of counts and examinations, which I do not observe that the bill provides.

BILL GENERALLY APPROVED.

In all other respects I am greatly pleased with the bill, and believe that its passage would greatly conduce to *correctness*, *efficiency*, and *economy* in the mint service. Owing to the peculiar nature of the subject it is my opinion that it would be difficult, if not impossible, to present a less objectionable bill to Congress, and I think that the confusion of the present mint laws, as well as the patent necessity of the proposed reforms, should secure the early passage of the bill.

O. H. LA GRANGE,
Superintendent.

Hon. J. J. KNOX,
Deputy Comptroller, Washington, D. C.

Assayer of branch mint at San Francisco to Mr. Knox.

ASSAY OFFICE, UNITED STATES BRANCH MINT,
San Francisco, June 3, 1870.

SIR: I have received a copy of your report and "Bill revising the laws relating to the mints, assay offices, and coinage of the United States," and Superintendent La Grange has informed me that you have requested the opinions of the officers of this mint upon it.

I have read it over carefully, and the only suggestion I have to propose now is, to section 47. I think it should be changed so as to read as follows: "That unparted bars may be exchanged at any of the respective coinage mints for *refined bars not less than .990 fine*, on such terms amd conditions," &c.

Section 13 provides that silver shall not exceed one-tenth of the whole alloy; consequently, if crude bullion should be exchanged for "fine bars" the fineness of which was below .990 fine, it would have to be refined at the Mint to comply with section 13; then economy, the object to be obtained in section 47, would be defeated.

Don't change section 13; it is good.

With great respect, your obedient servant,

O. D. MUNSON,
Assayer.

Hon. JOHN J. KNOX,
Deputy Comptroller of the Currency, Washington, D. C.

Mr French to Mr. Knox.

ABRASION OF COIN.

FOOTE & FRENCH, BANKERS,
7 Congress st., and 2 Congress Square, Boston, June 3, 1870.

SIR: I have read with interest your report of April 25, upon revision, &c., of Mint and coinage.

I notice in the English act given in Appendix D, section 4, that a

tender of coin must be in pieces not * * * diminished in "weight by wear or otherwise, so as to be of less weight than the *least current weight*" given in schedule first annexed to the act.

I believe there is no similar provision in our existing statutes. Will you inform me what rule or usage, if any, obtains in the department by which light coins can be rejected?

Upon inquiry of the assistant treasurer at New York, I learn that in absence of suspicion, *all* coins are received and paid out. As a usage at the custom-house in this city, I believe, the weight of five thousand dollars in double-eagles is examined and required to come up to a certain standard before being accepted, although some may be right by tale.

Respectfully,

F. O. FRENCH.

JOHN JAY KNOX, Esq.,
Comptroller of Currency, Washington, D. C.

Mr. Knox to Mr. French.

TREASURY DEPARTMENT,
OFFICE OF COMPTROLLER OF THE CURRENCY,
June 5, 1870.

DEAR SIR: I have received your note of the 3d instant, in which, referring to my * report and to section 4 of the English coinage act, 1870, given in the appendix, you request me to inform you what rule or usage obtains in this department by which light coins may be rejected.

Section 4 of the English coinage act, 1870, to which you refer, provides that "a tender of payment of money, if made in coins which have been issued by the mint in accordance with the provisions of this act, and have not been called in by any proclamation made in pursuance of this act, and have not become diminished in weight by wear or otherwise, so as to be of less weight than the current weight, that is to say, than the weight (if any) specified as the least current weight in the first schedule to this act, or less than such weight as may be declared by any proclamation made in pursuance of this act, shall be a legal tender—in the case of gold coins for a payment of any amount: in the case of silver coins for a payment of an amount not exceeding forty shillings, but for no greater amount: in the case of bronze coins for a payment of an amount not exceeding one shilling, but for no greater amount. Nothing in this act shall prevent any paper currency which, under any act or otherwise, is a legal tender, from being a legal tender.'

The schedule to which reference is made in this section limits the abrasion in the sovereign to 0.774 grains, or about three (2.998) cents of our gold standard, which is equivalent in the sovereign and half-sovereign also to about five-eighths (0.625) of one per cent.

The French mint laws limit the abrasion within which their gold coins may be received as a legal tender to seven tenths of one per cent. The twenty-franc piece is worth $3.859 in our currency, and the limit of wear allowed on this piece is, therefore, two and seven-tenth (2.702) cents of our gold standard.

Russia, Spain, and the states constituting the German Coin Union, also have laws relative to allowance for abrasion.

This subject was not entirely overlooked. In the bill (a copy of which I send herewith) first printed and transmitted for examination to experts

*Our report and "English coinage act 1870," see Senate Mis. Doc. No. 132, 41st Congress, 2d Session.

in various parts of the country, it was provided, in section 25, that our gold coins may be recoined at the expense of the United States whenever the loss by abrasion shall have reduced them one grain below the deviation allowed by law. The section was introduced into that bill for the purpose of obtaining an expression of opinion upon that subject, and was subsequently omitted from the bill transmitted to the Senate by the Secretary. The English section is much better in form, and it was my intention to have referred to it in the report. I am obliged to you for calling my attention to the subject at this time.

There is no law and no regulation of the department with reference to the limit of wear of coins. You refer to a *usage* of this kind in the Boston custom-house. Will you please ascertain and inform me what that usage is?

I shall be glad to receive any further suggestions that may occur to you in reference to the bill.

I am, very truly, yours,

JNO. JAY KNOX,
Deputy Comptroller.

F. O. FRENCH, Esq.,
Of Messrs. Foote & French, Bankers, Boston, Mass.

Mr. French to Mr. Knox.

FOOTE & FRENCH, BANKERS,
7 Congress st., and 2 Congress Square, Boston, June 11, 1870.

SIR: I am in receipt of your esteemed favor of 5th instant, at hand this morning.

The usage at the custom-house, I believe, is to receive coin by tale, but parcels of $5,000 in eagles and double-eagles, or of $1,000 in smaller coin, which fall below the customary deficiency from standard weight, are submitted to a careful examination of individual pieces, and such as do not pass the test of Allender's gold-coin scale, (patent of November 27, 1855,) and which is approximative, are rejected.

At the sub-treasury single pieces are not rejected unless imperfect (punched, soldered for jewelry, &c.) or subjected to vicious process. The deviation from below standard there expected in parcels of coin is *not beyond*

Five pennyweights, in $5,000, double-eagles.
Fifteen pennyweights, in $5,000, eagles.
Five pennyweights, in $1,000, one-half eagles.
Five pennyweights, in $1,000, one-quarter eagles.
Five pennyweights, in $999, three dollar pieces.
Five pennyweights, in $1,000, one dollar pieces.

But the authority for this expected deviation, other than tradition, was not stated. In practice, I am further informed that the parcels of $5,000 in eagles are frequently deficient as much as 18 pennyweights, those of $1,000 in quarter-eagles 6 to 7 pennyweights, while parcels of double-eagles, half-eagles, three and one dollar pieces come within the limit with great constancy.

The increased deficiency in the coins mentioned indicate the necessity of some redemption of light coins, to prevent even greater deviations.

Respectfully,

F. O. FRENCH.

JOHN JAY KNOX, Esq.,
Deputy Comptroller Currency, Washington.

The Secretary of the Treasury to the assistant treasurer at New York.

ABRASION OF COIN.

TREASURY DEPARTMENT,
Washington, D. C., June 18, 1870.

SIR: I inclose herewith a copy of a letter received from Messrs. Foote & French, bankers, Boston, in reference to a usage in the custom-house of that city of receiving gold coins at less than standard weight.

I will thank you to inform me if any similar usage obtains in your office; and, also, if you have any data which you can give me in reference to the deviation hitherto found from standard, in weighing in bulk gold coins of different denominations.

If it is practicable send me, at your earliest convenience, a statement similar to that furnished by French & Foote, in reference to the experience of your office in this particular.

Very respectfully,

GEO. S. BOUTWELL,
Secretary of the Treasury.

Hon. CHARLES J. FOLGER,
Assistant Treasurer, New York.

Assistant treasurer New York to the Secretary of the Treasury.

ABRASION OF COIN.

UNITED STATES TREASURY,
New York, June 20, 1870.

SIR: I have the honor of acknowledging the receipt of your letter, dated 18th June, 1870, covering copy of letter of Messrs. Foote & French, bankers; both relating to the diminution of value in coin from abrasion.

The usage of the custom-house at Boston, as set forth in the letter of Messrs. Foote & French, does not prevail at this office. It has, as I learn, ever been the custom of this office, it is now its custom, to receive all United States coin by count alone; in no case rejecting any, however light, if the diminution is the result of natural wear and use alone in circulating as a medium. Standard weights have never been used to confirm amounts.

This forenoon a test was applied to certain quantities of coin taken hap hazard from that coming to the office in the ordinary flow of daily business, with the following result:

$5,000, gold dollars, twenty-five pennyweights short.
$5,000, quarter-eagles, twenty-five pennyweights short.
$5,000, half-eagles, twenty three to twenty-seven pennyweights short.
$5,000, eagles, eighteen to twenty-one pennyweights short.
$5,000, double eagles, ten to twelve pennyweights short.

It has always been perceptible to the persons in the coin room of this office that the coin of the country was much decreased in weight by the attrition of circulation; but no piece has ever been rejected when the loss has resulted from honest handling.

I can give no further statement than this as to the experience of this office in this particular, for the reason that the attention of [illegible] has never been especially directed to this point, they taking by count en-

tirely. The desire of the business community for the larger coins, when coin is taken from us for foreign shipment, is based upon this well-known fact, that coin does suffer in the handling, and that the smaller in value the coin, the greater the proportionate diminution.

With respect, I am, your obedient servant,

CHAS. J. FOLGER,
Assistant Treasurer United States.

Third Assistant Postmaster General to Secretary of the Treasury.

REDEMPTION OF THE BRONZE AND NICKEL COINAGE NECESSARY.

POST OFFICE DEPARTMENT,
OFFICE OF THE THIRD ASSISTANT POSTMASTER GENERAL,
Washington, D. C., November 2, 1869.

SIR: I have the honor to call your attention to the inclosed copy of a letter received at this department from the postmaster at Nashville, Tennessee, under date of 29th ultimo, in relation to the disposition of copper and nickel coins received for postage. You will observe that, while the postmaster is compelled to receive the coins in limited quantities, he states he is unable to pay them out, as they are not used or regarded as currency in that section of the country.

Similar statements and complaints have been made recently by other postmasters, and it is believed a large amount of the revenues of this department is locked up and withheld from use from the cause mentioned by the postmaster at Nashville.

It would seem that some measure of relief, in such cases, ought to be adopted, and I beg to ask that the subject receive your early and favorable attention.

Very respectfully, your obedient servant,

W. H. H. TERRELL,
Third Assistant Postmaster General.

Hon. GEORGE S. BOUTWELL,
Secretary of the Treasury.

Postmaster at Nashville, Tennessee, to Postmaster General.

POST OFFICE, NASHVILLE, TENNESSEE,
October 29, 1869.

SIR: I inclose the following item, taken from the Associated Press dispatches published this morning: "Secretary Boutwell will shortly issue a circular authorizing the assistant treasurers and designated depositories to redeem the nickel five-cent pieces in sums of $100, or more."

Why cannot the one and two cent coppers be treated in the same way?

This office is greatly annoyed by the great pressure to exchange them for postage stamps. It seems very inconsistent for any department of the government to refuse to take any of their own recognized issue of currency.

We take these coppers, according to legal tender law, in limited quantities; but there is no possible way to get rid of them here.

In this community and section of country coppers are not used or regarded as currency, and they ought to be redeemed and retired.

Very respectfully,

ENOS HOPKINS,
Postmaster.

Hon. W. H. H. TERRELL,
Third Assistant Postmaster General, Washington, D. C.

Postmaster at Cape Vincent, New York, to Secretary of the Treasury.

REDEMPTION OF THE BRONZE AND NICKEL COINAGE.

CAPE VINCENT, N. Y., *June* 14, 1870.

SIR: Will you have the kindness to inform me on what terms and conditions your department will redeem the bronze and nickel cents now in circulation?

In my business here as postmaster they have accumulated on my hands since two or three years. I cannot exchange them with individuals. Too many cents are in circulation already. I am obliged to take them from others in selling postage stamps, but they will not take them from me.

What am I to do, unless the department will redeem them? I am willing to pay the express charges.

Very respectfully, your obedient servant,

JNO. H. MOORE.

Hon. GEO. S. BOUTWELL,
Secretary of the Treasury.

P. S.—I have also too many bronze two-cent pieces and five-cent nickels. Will you redeem them also?

Messrs. Holley & Shelden to the Secretary of the Treasury.

REDEMPTION OF THE BRONZE AND NICKEL COINAGE.

HUDSON, N. Y., *June* 11, 1870.

DEAR SIR: Is there no way by which we can dispose of pennies? The country is flooded with all kinds, large and small, making it very unpleasant to do business. We are obliged to handle hundreds of dollars weekly in pennies, and we find great difficulty in getting rid of them again. In this section of the country, mechanics are compelled to take two or more dollars weekly in payment for their services, and have to go begging around to the stores to dispose of them as the merchants are all overrun with them.

NOT RECEIVED BY OFFICERS OF THE GOVERNMENT FOR TAXES AND POSTAGE STAMPS.

We pay several hundred to the government yearly in licenses, special taxes, and income tax for doing business, still the government officers will not take a dollar of their own pennies in payment for said taxes. We cannot even buy postage stamps with them; the postmaster refuses to sell over one stamp and receive pennies in payment.

THEY SHOULD BE REDEEMED.

In common justice to the business community, who are the supporters of the government, should not pennies and three or five cent pieces be redeemed when presented at the Mint or Treasurer or Assistant Treasurer's office? This would cost about one and a half to two per cent. in express charges, but would relieve business men of a large amount of dead capital lying idle through the country. Think of each member of Congress and all government officers receiving one-fourth part of their salaries in pennies and then you can get an idea of the unpleasant manner in which we and hundreds of others are compelled to do business. We labored under the same difficulty for a long time with fractional currency previous to the redemption of the same.

Hoping you will give this matter your careful attention, we are, respectfully yours,

HOLLEY & SHELDEN,
Hudson, New York.

Hon. G. S. BOUTWELL,
Secretary of the Treasury.

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*Secretary of the Treasury to Messrs. Holley and Sheldon.**

REDEMPTION OF MINOR COINAGE.

TREASURY DEPARTMENT, *June* 17, 1870.

GENTLEMEN: I have received your letter of the 11th instant, inquiring upon what terms and conditions the department will redeem the bronze and nickel coinage now in circulation.

The nickel cent coins, issued under act of February 21, 1857, and composed of eighty eight per cent. copper and twelve per cent. nickel, are not a legal tender for any amount, but are exchangeable at the Mint of the United States for three and five cent nickel pieces upon the terms stated in the inclosed circular.

The one and two cent pieces, authorized by act of April 22, 1864, composed of ninety-five per cent. copper and five per cent of tin and zinc, and which comprise the chief portion of the cent coinage in circulation, are a legal tender for any payment not exceeding four cents in amount.

The three-cent nickel pieces are a legal tender for sixty cents, and the five-cent pieces for one dollar.

There is no provision of law authorizing the redemption of the one and two cent pieces; but a circular has recently been issued by the Secretary directing the redemption of the five-cent pieces by the Treasurer and assistant treasurers, as authorized by act of May 16, 1866, when presented in sums of not less than one hundred dollars.

I inclose herewith copy of a bill which has been introduced into the Senate, during the present session, relative to the revision of our mint and coinage laws; and it is probable that some legislation will transpire not long hence which will correct the inconvenience of which you justly complain.

Very respectfully,

J. F. HARTLEY,
Acting Secretary of the Treasury.

MESSRS. HOLLEY & SHELDON,
Hudson, New York.

* Similar letters were written in reply to the Postmaster General and to the postmaster at Cape Vincent.

APPENDIX.

PROPOSED BILL.

A BILL revising the laws relative to the mints, assay offices, and coinage of the United States.

Mint Bureau.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Mint of the United States is hereby established as a bureau of the Treasury Department, embracing in its organization and under its control all mints for the manufacture of coin, or assay offices for the stamping of bars, which are now or which may be hereafter authorized by law. The chief officer of the said bureau shall be denominated the Director of the Mint of the United States, and shall be under the general direction of the Secretary of the Treasury. He shall be appointed by the President, on the recommendation of the Secretary of the Treasury, by and with the advice and consent of the Senate, and shall hold his office for the term of five years, unless sooner removed by the President, upon reasons to be communicated by him to the Senate.

Director of the Mint.

Duties of Director.

SEC. 2. *And be it further enacted*, That the Director shall have the general supervision of all mints and assay offices, and shall make an annual report to the Secretary of the Treasury of their operations, at the close of each fiscal year; and from time to time such additional reports, setting forth the operations and condition of such institutions, as the Secretary shall require. He shall lay before the Secretary the annual estimates for their support. He shall appoint the necessary clerks to discharge such duties as he shall direct, whose appointment and rate of compensation shall first be approved by the Secretary of the Treasury. He shall also have charge of all other matters, statistical and otherwise, tending to the development of the mining industry of the precious metals.

Officers of the mints.

SEC. 3. *And be it further enacted*, That the officers of the mints established for the manufacture of coin shall be a superintendent, an assayer, a melter and refiner, and a coiner, and for the Mint at Philadelphia, an engraver, all to be appointed by the President of the United States, by and with the advice and consent of the Senate.

Duties of superintendents.

SEC. 4. *And be it further enacted*, That the superintendent of each mint shall have the control thereof, the superintendence of the officers and persons employed therein, and the supervision of the business thereof, subject to the direction of the Director. He shall make to the Director reports at such times and according to such forms as he may prescribe, which shall exhibit in detail, and under appropriate heads, the deposits of bullion, the amount of gold, silver, and minor coinage, and the amount of unparted, standard, and refined bars issued, and such other statistics and information as may be required by the Director.

The superintendent shall also receive and safely keep, until legally withdrawn, all moneys or bullion which shall be for the use or support of the mint; he shall receive all bullion brought to the mint for assay or coinage; shall be the keeper of all bullion or coin in the mint, except while the same is legally placed in the hands of other officers; and shall deliver all coins struck at the mint to the persons to whom they shall be legally payable. From the report of the assayer and the weight of the bullion he shall compute the whole value of each deposit, and also the amount of the charges or deductions, if any; of all of which he shall give a detailed memorandum to the depositor; and he shall also give at the same time, under his hand, a certificate of the net amount of the deposit, to be paid in coins or bars of the same species of bullion as that deposited, the correctness of which certificate shall be verified by the assayer, who shall countersign the same; he shall keep and render quarter-yearly to the Director, for the purpose of adjustment, according to such forms as may be prescribed by the Secretary of the Treasury, regular and faithful accounts of his transactions with the other officers of the mint and the depositors, and in all cases of transfer of coin or bullion he shall give and receive vouchers stating the amount and character of such coin or bullion. He shall also render to the Director a monthly statement of the ordinary expenses of the mint or assay office under his charge; he shall also appoint all assistants, clerks, [one of whom shall be designated chief clerk,) and workmen employed under his superin-

Assistants, clerks, and workmen—how appointed.

tendence, provided that no person shall be appointed to employment in the offices of the assayer, melter and refiner, coiner, or engraver, except on the recommendation and nomination in writing of these officers respectively. The superintendent shall forthwith report to the Director the names of all persons appointed by him, the duties to be performed, the rate of compensation, the appropriation from which compensation is to be made, and the grounds of the appointment. If thereupon the Director shall disapprove of the same, the appointment shall be vacated.

Of the assayers. SEC. 5. *And be it further enacted*, That the assayer shall correctly assay all metals and bullion whenever such assays are required in the operations of the Mint; he shall also make assays of coins when instructed to do so by the superintendent.

Of the melters and refiners. SEC. 6. *And be it further enacted*, That the melter and refiner shall execute all the operations which are necessary in order to form ingots of standard silver or gold and alloys for minor coinage suitable for the coiner from the metals legally delivered to him for that purpose. He shall also execute all the operations which are necessary, in order to form standard bars or disks, conformable in all respects to the law, from the gold and silver bullion delivered to him for that purpose. He shall keep a careful record of all transactions with the superintendent, noting the weight and character of the bullion, and shall be responsible for all bullion delivered to him until the same is returned to the superintendent, and the proper vouchers obtained.

Of the coiners. SEC. 7. *And be it further enacted*, That the coiner shall execute all the operations which are necessary in order to form coins, conformable in all respects to the law, from the standard gold and silver ingots and alloys for minor coinage legally delivered to him for this purpose. He shall be responsible for all bullion delivered to him, until the same is returned to the superintendent and the proper vouchers obtained.

Of the engraver. SEC. 8. *And be it further enacted*, That the engraver shall prepare from the original dies already authorized all the working dies required for use in the coinage of the several mints; and when new coins or devices are authorized, shall, if required by the Director, prepare the devices, models, molds, and matrices, or original dies for the same; but the Director shall nevertheless have power, with the approval of the Secretary of the Treasury, to engage temporarily for this purpose the services of one or more artists distinguished in their respective departments, who shall be paid for such service from the contingent appropriation for the Mint at Philadelphia.

Officers *pro tempore*. SEC. 9. *And be it further enacted*, That when any officer of a mint or assay office shall be temporarily absent on account of sickness, or any other sufficient cause, it shall be lawful for the superintendent, with the consent of the said officer, to appoint some person attached to the mint to act in the place of such officer during his absence, which officer shall be responsible for the acts of his representative. In case of the temporary absence of the superintendent, the chief clerk shall act in his place, but all such appointments shall be forthwith reported to the Director for his approval, and in all cases whatsoever the principal shall be responsible for the acts of his representative. In case of the temporary absence of the Director, the Secretary of the Treasury shall designate some one to act in his place.

Oath of office. SEC. 10. *And be it further enacted*, That every officer, assistant, and clerk of the mint shall, before he enters upon the execution of his office, take an oath or affirmation before some judge of the United States, or judge of the superior court, or any court of record of any State, faithfully and diligently to perform the duties thereof, in addition to other official oaths prescribed by law, which oaths, duly certified, shall be transmitted to the Secretary of the Treasury; and the superintendent at each mint may require such oath or affirmation from any of the employés of the mint.

Bond and security required. SEC. 11. *And be it further enacted*, That the superintendent, assayer, the melter and refiner, and coiner of each mint, before entering upon the execution of their respective offices, shall become bound to the United States, with one or more sureties approved by the Secretary of the Treasury, in the sum of not less than ten nor more than fifty thousand dollars, with condition for the faithful and diligent performance of the duties of their offices: *Provided*, The Secretary of the Treasury may at discretion increase the bonds of the superintendent. Similar bonds may be required of the assistants and clerks, in such sums as the superintendent shall determine, with the approbation of the Director, provided

that the same shall not be construed so as to relieve the superintendent or other officers from liability to the United States, for acts, omissions, and negligence of their subordinates or employés.

Salaries of officers.

SEC. 12. *And be it further enacted*, That there shall be allowed to officers of the mint the following salaries, per annum: To the Director five thousand five hundred dollars, and necessary traveling expenses in visiting the different mints and assay offices; to the superintendents of the mints at Philadelphia and San Francisco, five thousand dollars; to the assayers, melters and refiners, and coiners of those mints, each, three thousand five hundred dollars; to the engraver of the Mint at Philadelphia, three thousand dollars; to the superintendent of the mint at Carson City, and all other mints now established, or hereafter to be established, a salary of not exceeding three thousand five hundred dollars; and to the assayer, melter and refiner, and coiner of such institutions, each a salary of not exceeding three thousand dollars; to the assistants and clerks such annual salaries shall be allowed as the superintendent may determine, with the approbation of the Director. To the workmen shall be allowed such wages, to be determined by the superintendent, as may be customary and reasonable, according to their respective stations and occupations; and the salaries provided for in this section, and the wages of the workmen permanently engaged, shall be payable in monthly installments.

Standard for gold and silver coins—alloys.

SEC. 13. *And be it further enacted*, That the standard for both gold and silver coins of the United States shall hereafter be such, that of one thousand parts by weight, nine hundred shall be of pure metal, and one hundred of alloy; and the alloy of the silver coins shall be of copper, and the alloy of the gold coins shall be of copper and silver, provided that the silver does not exceed one-tenth of the whole alloy.

Weight of gold coins—legal tender.

SEC. 14. *And be it further enacted*, That of the gold coins, the weight of the double-eagle or twenty-dollar piece shall be five hundred and sixteen grains; that of the eagle or ten-dollar piece, two hundred and fifty-eight grains; that of half-eagle or five-dollar piece, one hundred and twenty-nine grains; that of the quarter-eagle or piece of two and one-half dollars, sixty-four and one-half grains; that of the three-dollar piece, seventy-seven and four-tenths grains; that of the one-dollar piece, or unit of value, twenty-five and eight-tenths grains; and these coins shall be a legal tender in all payments.

Weight of silver coins—legal tender.

SEC. 15. *And be it further enacted*, That of the silver coins, the weight of the half-dollar, or piece of fifty cents, shall be one hundred and ninety-two grains; and that of the quarter-dollar and dime shall be, respectively, one-half and one-fifth of the weight of said half-dollar. That the silver coin issued in conformity with the above section shall be a legal tender in any one payment of debts for all sums less than one dollar.

Standard of minor coinage.

SEC. 16. *And be it further enacted*, That the standard for minor coinage shall be an alloy of copper and nickel, to be composed of three-fourths copper and one-fourth nickel.

Weight of copper-nickel coin—legal tender.

SEC. 17. *And be it further enacted*, That of the copper-nickel coinage the weight of the piece of five cents shall be five grams, or seventy-seven and sixteen-hundredths grains troy; that of the three-cent piece, three grams, or forty-six and thirty-hundredths grains; and of the one-cent piece, one and one-half grams, or twenty-three and fifteen-hundredths grains; which coins shall be a legal tender in any one payment to the amount of twenty cents.

No other coins authorized.

SEC. 18. *And be it further enacted*, That no coins, either gold, silver, or minor coinage, shall hereafter be issued from the mint, other than those of the denominations, standards, and weights herein set forth.

Devices and legends on coins.

SEC. 19. *And be it further enacted*, That upon the coins of the United States there shall be the following devices and legends: Upon one side of each of the said coins there shall be an impression emblematic of Liberty, with an inscription of the word LIBERTY, and the year of the coinage; and upon the reverse of each coin there shall be the figure or representation of an eagle, with the inscriptions UNITED STATES OF AMERICA and E PLURIBUS UNUM, and a designation of the value of the coin; but on the reverse of the gold dollar and three-dollar piece, the dime, five, three, and one cent pieces, the figure of the eagle shall be omitted; and the Director of the Mint, with the approval of the Secretary of the Treasury, may cause the motto, "In God we Trust," to be placed upon such coins as shall admit of such legends.

Parted and unparted bars.

SEC. 20. *And be it further enacted*, That, at the option of the owner, gold or silver may be cast into bars or ingots, or formed into disks of either fine metal, or of standard fineness, or unrefined, as he may prefer, with a stamp upon the same, designating the weight and fineness, and

with such devices impressed thereon as may be deemed expedient to protect against fraudulent imitations; provided that no such bars, ingots, or disks shall be issued of a less weight than five ounces, and that no valuation shall be stamped upon the same.

Conditions of deposit of bullion.

SEC. 21. *And be it further enacted*, That any owner of gold and silver bullion may deposit the same at the mint, to be formed into coin or bars for his benefit: *Provided*, That it shall be lawful to refuse any deposit of less value than one hundred dollars, and any bullion so base as to be unsuitable for the operations of the mint: *And provided also*, That when gold and silver are combined, if either of these metals be in such small proportion that it cannot be separated advantageously, no allowance shall be made to the depositor for the value of such metal.

Receipt to be given.

SEC. 22. *And be it further enacted*, That when bullion is brought to the mint for coinage it shall be weighed by the superintendent in the presence of the depositor, when practicable, and a receipt given, which shall state the description and weight of the bullion: *Provided*, That when the bullion is in such a state as to require melting before its value can be ascertained, the weight after melting shall be considered as the true weight of the bullion deposited.

Assay of bullion.

SEC. 23. *And be it further enacted*, That from every parcel of bullion deposited for coinage, bars, or disks, the superintendent shall deliver to the assayer a sufficient portion for the purpose of being assayed; but all such bullion remaining from the operations of the assay shall be returned to the superintendent by the assayer.

Assayer to report to superintendent.

SEC. 24. *And be it further enacted*, That the assayer shall report to the superintendent the quality or standard of the bullion assayed by him; and he shall also communicate to the superintendent such information as will enable him to compute the amount of the charges hereinafter provided for, to be made to the depositor for the expenses of converting the bullion into standard metal fit for coinage.

Charges of the mint.

SEC. 25. *And be it further enacted*, That the only charge on deposits of bullion for coin, bars, or disks, shall be as follows: For refining, when the bullion is below standard; for toughening, when metals are contained in it which render it unfit for coinage; for copper used for alloy, when the bullion is above standard; for separating the gold and silver, when these metals exist together in the bullion; for the preparation of bars, or disks; and the rate of these charges shall be fixed from time to time by the Director, with the concurrence of the Secretary of the Treasury, so as to equal but not to exceed, in their judgment, the actual average expense to each mint of the material and labor employed in each of the cases aforementioned.

Assayer to verify calculations of value.

SEC. 26. *And be it further enacted*, That the assayer shall verify all calculations made by the superintendent of the value of deposits, and if satisfied of the correctness thereof, shall countersign the certificate of the same heretofore required to be given by the superintendent to the depositor.

No deposits of silver for coinage received.

SEC. 27. *And be it further enacted*, That silver bullion, deposited by private holders, shall be paid for in silver bars, or disks, only, and that no deposit for coinage into silver coin shall be received: *Provided, however*, That silver bullion contained in gold deposits, and separated therefrom, may be paid for in silver coin at such valuation as may be from time to time established by the Director.

Purchase of silver bullion for coinage.

SEC. 28. *And be it further enacted*, That in order to procure bullion for the silver coinage, authorized by this act, the superintendent of each mint shall, with the approval of the Director as to price, terms, and quantity, purchase such bullion with the gold coins in the bullion fund. The gain arising from the coinage of such bullion into coin of a nominal value, exceeding the cost value thereof, shall be credited to a special fund denominated the "silver profit fund." This fund shall be charged with the wastage incurred in the silver coinage, and with the expense of distributing said coins as hereinafter provided; the balance to the credit of this fund shall be from time to time, and at least twice a year, paid into the treasury of the United States.

Silver coin issued only in exchange for gold.

SEC. 29. *And be it further enacted*, That such coins shall be paid out at the mints only in exchange for gold coins at par, and in sums not less than one hundred dollars, and it shall be lawful, also, to transmit parcels of the same, from time to time, to the assistant treasurers, depositaries, and other officers of the United States, under general regulations

proposed by the Director of the Mint, and approved by the Secretary of the Treasury: *Provided*, That nothing herein contained shall hinder the payment of silver coins for silver parted from gold as above provided, or for change less than one dollar in settlements for gold deposits.

Manufacture of copper-nickel coins.

SEC. 30. *And be it further enacted*, That in order to procure the metal for the minor coinage of copper-nickel authorized by this act, a sum not exceeding one hundred thousand dollars in lawful money of the United States shall be deposited by the Secretary of the Treasury with the superintendent of the Mint at Philadelphia, at which establishment only, until otherwise provided by law, such minor coinage shall be carried on. With this fund the superintendent shall, with the approval of the Director as to price, terms, and quantity, purchase the metals required for such coinage. The gain arising from the coinage of such metals into coin of a nominal value, exceeding the cost thereof, shall be credited to the special fund denominated the "minor coinage profit fund." This fund shall be charged with the wastage incurred in such coinage, and with the expenses of distributing said coins as hereinafter provided. The balance to the credit of this fund, and any balance of profits accrued from minor coinage under former acts, shall be from time to time, and at least twice a year, paid into the treasury of the United States.

Issue of copper-nickel coins.

SEC. 31. *And be it further enacted*, That it shall be the duty of the superintendent to deliver the copper-nickel coins in exchange for their legal equivalent in other money to any person who shall apply for them: *Provided*, That the sum asked for shall not be less than a certain amount to be previously determined by him, and that it be not so great as in his judgment to interfere with the capacity of the mint to supply other applicants.

Distribution of.

SEC. 32. *And be it further enacted*, That the copper-nickel coins may, at the discretion of the superintendent, be delivered in any of the principal cities and towns of the United States, at the cost of the mint for transportation.

Exchangeable for all other base metal coinage. Redemption.

SEC. 33. *And be it further enacted*, That the copper-nickel coins authorized by this act shall be exchangeable at par at the Mint in Philadelphia for every other coin of copper, bronze, or copper-nickel (except the three and five cent copper-nickel pieces) heretofore authorized by law; and it shall be lawful for the Treasurer and the several assistant treasurers and depositaries of the United States to redeem, in national currency, under such rules and regulations as may be prescribed by the Secretary of the Treasury, the copper-nickel coin herein authorized to be issued, when presented in sums of not less than fifty dollars, (§50;) and whenever under this authority these coins are presented for redemption in such quantity as to show the amount outstanding to be redundant, the Secretary of the Treasury is authorized and required to direct that such minor coinage shall cease until otherwise ordered by him.

Melter and refiner to prepare standard ingots.

SEC. 34. *And be it further enacted*, That parcels of bullion shall be from time to time transferred by the superintendent to the melter and refiner; that a careful record of these transfers, noting the weight and character of the bullion, shall be kept, and that vouchers shall be taken for the delivery of the same, duly receipted by the melter and refiner, and that the bullion thus placed in the hands of the melter and refiner shall be subjected to the several processes which may be necessary to form it into ingots of the legal standard and of a quality suitable for coinage.

Ingots to be assayed.

SEC. 35. *And be it further enacted*, That the ingots thus prepared shall be assayed by the assayer, and if they prove to be within the limit allowed for deviation from the standard, the assayer shall certify the fact to the superintendent, who shall thereupon receive the same and transfer them to the coiner.

Tolerance in fineness.

SEC. 36. *And be it further enacted*, That no ingots shall be used for coinage which differ from the legal standard more than the following proportions, namely: In gold ingots, one-thousandth; in silver ingots, two-and-one-half-thousandths; in copper-nickel ingots, twenty-five-thousandths, in the proportion of nickel.

Bars—how prepared & stamped.

SEC. 37. *And be it further enacted*, That the melter and refiner shall prepare all bars, ingots, or disks required for the payment of deposits, but the fineness thereof shall be ascertained and stamped thereon by the assayer.

Gold.—Tolerance in weight of single pieces; tolerance in bulk.

SEC. 38. *And be it further enacted*, That in adjusting the weights of the gold coins the following deviations shall not be exceeded in any single piece: In the double-eagle, one-half of a grain; in the eagle, three-eighths of a grain; in the half-eagle, one-fourth of a grain; in the three-dollar piece, and quarter-eagle, one-sixth of a grain; and in the one-dollar piece, one-twelfth of a grain. And that in weighing a large number of pieces together when delivered from the coiner to the superintendent, and from the superintendent to the depositor, the deviation from the standard weight shall not exceed one-hundredth of an ounce in five thousand dollars' worth of double-eagles, eagles, half-eagles, or quarter-eagles; seven-and-a-half-thousandths of an ounce in three thousand dollars' worth of three-dollar pieces; and five-thousandths of an ounce in one thousand one-dollar pieces.

Silver.—Tolerance in weight of single pieces; tolerance in bulk.

SEC. 39. *And be it further enacted*, That in adjusting the weight of silver coins the following deviations shall not be exceeded in any single piece: In the half and quarter dollar, one grain; and in the dime, half a grain; and that in weighing large numbers of pieces together when delivered from the coiner to the superintendent, and from the superintendent to the depositor, the deviations from the standard weight shall not exceed the following limits: Two-hundredths of an ounce in one thousand dollars' worth of half-dollars, or quarter-dollars; and one-hundredth of an ounce in one hundred dollars' worth of dimes.

Copper-nickel; tolerance.

SEC. 40. *And be it further enacted*, That in adjusting the weight of the copper-nickel coins provided by this act, there shall be no greater deviation allowed than three grains for the five-cent pieces, and two grains for the three and one cent pieces.

Delivery of coins to superintendent, who shall test their legal weight.

SEC. 41. *And be it further enacted*, That the coiner shall, from time to time, as the coins are prepared, deliver them over to the superintendent, who shall keep a careful record of their kind, number, and weight; and that in receiving the coins it shall be the duty of the superintendent to ascertain, by the trial of a number of single pieces separately, whether the coins of that delivery are within the legal limits of the standard weight; and if his trials for this purpose shall not prove satisfactory, he shall cause all the coins of this delivery to be weighed separately, and such as are not of legal weight shall be defaced and delivered to the melter and refiner as standard bullion, to be again formed into ingots and recoined; or the whole delivery may, if more convenient, be remelted.

Coins to be reserved for the annual assay.

SEC. 42. *And be it further enacted*, That at every delivery of coins made by the coiner to the superintendent, it shall be the duty of the superintendent of each mint, in the presence of the assayer, to take indiscriminately a certain number of pieces of each variety for the annual trial of coins, (the number being prescribed by the Director,) which shall be carefully sealed up, labeled, and deposited in the pyx appropriated for the purpose, kept under the joint care of the superintendent and assayer, and so secured that neither can have access to its contents without the presence of the other; which pieces, except those coined at that institution, shall be transmitted quarterly to the Mint at Philadelphia. Other pieces may at the same time be taken for such tests as the Director shall prescribe.

Superintendent's account with coiner.

SEC. 43. *And be it further enacted*, That in the superintendent's account with the coiner, the latter shall be debited with the amount in weight of standard metal of all the bullion placed in his hands, and credited with the amount, also by weight, of all coins, clippings, and other bullion delivered by him to the superintendent. Once at least in every year, at such time as the superintendent shall appoint, there shall be an accurate and full settlement of the accounts of the respective operative officers, (the coiner, and melter and refiner,) at which time the said officers shall deliver up to the superintendent all the bullion and coin in their possession, respectively, accompanied by statements of all the bullion delivered to them since the last annual settlement, and all the bullion returned by them during the same period, including the amount returned for the purpose of settlement. Counter-statements shall be presented by the superintendent.

Annual settlement.

Allowance for wastage.

SEC. 44. *And be it further enacted*, That when the bullion and coin have all been surrendered up to the superintendent it shall be his duty to examine the accounts and statements rendered by the operative officers, (for the same,) and if the bullion falls short of that delivered, the difference between the amount charged and credited to each officer shall be allowed as necessary wastage, provided the superintendent shall be

satisfied that there has been a *bona fide* waste of the precious metals, and provided, also, that the amount shall not exceed, in the case of the melter and refiner, one-thousandth of the whole amount of gold and one-and-one-half-thousandth of the silver bullion delivered to him since last annual settlement; and in the case of the coiner, one-thousandth of the whole amount of silver, and one-half-thousandth of the whole amount of gold, that has been delivered to him by the superintendent; provided that all copper used in the alloy of gold and silver bullion shall be separately charged to the melter and refiner and accounted for by him.

Settlement and transmission of accounts.

SEC. 45. *And be it further enacted*, That it shall also be the duty of the superintendent to forward a correct statement of his balance-sheet at the close of such settlement to the Director, who shall compare the total amount of gold and silver bullion and coin on hand with the total liabilities of the mint. A corresponding statement of the ordinary account, and the moneys therein, shall also be made by the superintendent.

Order in which depositors shall be paid.

SEC. 46. *And be it further enacted*, That when the coins or bars which are the equivalent to any deposit of bullion are ready for delivery, they shall be paid over to the depositor, or his order, by the superintendent; and the payments shall be made, if demanded, in the order in which the bullion shall have been brought to the mint; but in cases where there is delay in manipulating a refractory deposit, or for any other unavoidable cause, the payment of subsequent deposits, the value of which is known, shall not be delayed thereby; and that in the denominations of coins delivered, the superintendent shall comply with the wishes of the depositor, unless when impracticable or inconvenient to do so.

Exchange of bullion authorized.

SEC. 47. *And be it further enacted*, That unparted bars may be exchanged at any of the respective coinage mints for fine bars, on such terms and conditions as may be prescribed by the Director, with the approval of the Secretary of the Treasury.

Bullion fund.

SEC. 48. *And be it further enacted*, That for the purpose of enabling the mints and assay office in New York to make returns to depositors with as little delay as possible, it shall be the duty of the Secretary of the Treasury to keep in the said mints and assay office, when the state of the treasury will admit thereof, such an amount of public money, or bullion procured for the purpose, as he shall judge convenient and necessary, out of which those who bring bullion to the said mints and assay office may be paid the value thereof in coin or bars as soon as practicable after the value has been ascertained; and on payment thereof being made the bullion so deposited shall become the property of the United States; and that the Secretary of the Treasury may at any time withdraw the bullion fund, or any portion thereof.

Annual trial of the pyx.

SEC. 49. *And be it further enacted*, That to secure a due conformity in the gold and silver coins to their respective standards of fineness and weight, an annual trial shall be made of the pieces reserved at the several mints for this purpose, before the judge of the district court of the United States for the eastern district of Pennsylvania, the assayer of the assay office, New York, and such other persons as the President shall from time to time designate for that purpose, who shall meet as commissioners, at the Mint in Philadelphia, for the performance of this duty, on the second Monday in February, annually, and may continue their meetings by adjournment, if necessary; and if a majority of the commissioners shall fail to attend at any time appointed for their meeting, then the Director of the Mint shall call a meeting of the commissioners at such other time as he may deem convenient; and that before these commissioners, or a majority of them, and in the presence of the Director of the Mint, such examination shall be made of the reserved pieces as shall be judged sufficient; and if it shall appear that these pieces do not differ from the standard fineness and weight by a greater quantity than is allowed by law, the trial shall be considered and reported as satisfactory; but if any greater deviation from the legal standard or weight shall appear, this fact shall be certified to the President of the United States; and if, on a view of the circumstances of the case, he shall so decide, the officer or officers implicated in the error shall be thenceforward disqualified from holding their respective offices.

Standard troy pound of the mint.

SEC. 50. *And be it further enacted*, That for the purpose of securing a due conformity in weight of the coins of the United States to the provisions of this act, the brass troy pound weight procured by the minister of the United States at London, in the year one thousand eight hundred and twenty-seven, for the use of the Mint, and now in the custody of the Mint at Philadelphia, shall be the standard troy pound

of the Mint of the United States, conformably to which the coinage thereof shall be regulated.

Corresponding weights for each mint and assay office.

SEC. 51. *And be it further enacted*, That it shall be the duty of the Director of the Mint to procure for each mint and assay office, and safely to keep thereat, a series of standard weights corresponding to the aforesaid troy pound, consisting of an one pound weight and the requisite subdivisions and multiples thereof, from the hundredth part of a grain to twenty-five pounds; and that the troy weights ordinarily employed in the transactions of each mint and assay office shall be regulated according to the above standards at least once in every year, under the inspection of the superintendent and assayer, and the accuracy of those used at the Mint at Philadelphia shall be tested annually, in the presence of the assay commissioners, on the day of the annual assay.

Annual destruction of dies.

SEC. 52. *And be it further enacted*, That the working dies at each mint shall, at the end of each calendar year, be defaced and destroyed by the coiner in the presence of the superintendent and assayer.

Medals.

SEC. 53. *And be it further enacted*, That national and other medals may be prepared at the Mint at Philadelphia, under such regulations as the superintendent, with the approval of the Director, may prescribe: *Provided*, That such work does not interfere with the regular coinage operations of said mint.

Mint charges to be paid into the treasury.

SEC. 54. *And be it further enacted*, That the moneys arising from all charges and deductions on and from gold and silver bullion, and the manufacture of medals, and from all other sources, except as hereinbefore provided, shall from time to time be paid and covered into the treasury of the United States; and no part of such deductions or medal charges, or profit on silver, or minor coinage shall be expended in salaries or wages; but all expenditures of the mints and assay offices not herein otherwise provided for shall be paid from appropriations made by law on estimates furnished by the Secretary of the Treasury.

New York assay office. Officers, and business of.

SEC. 55. *And be it further enacted*, That the officers of the United States assay office at New York shall be a superintendent, an assayer, and a melter and refiner, who shall be appointed by the President, by and with the advice and consent of the Senate. The business of the assay office shall be in all respects similar to that of the mints, except that bars only, refined or unrefined, and not coin, shall be manufactured therein; and no silver, copper, or nickel shall be purchased for small silver, or minor coinage. All bullion intended by the depositor to be converted into coins of the United States shall, as soon as assayed, parted, and refined, and its net value certified, be transferred to the Mint at Philadelphia, under such directions as shall be made by the Secretary of the Treasury, at the expense of the contingent fund of the Mint, and shall be there coined and the proceeds returned to the assay office; and the Secretary of the Treasury is hereby authorized to make the necessary arrangements for the adjustment of the accounts upon such transfers between the respective offices.

Duties of officers.

SEC. 56. *And be it further enacted*, That the duties of superintendent, assayer, and melter and refiner of said office shall correspond to those of superintendents, assayers, and melter and refiners of the mints, and all parts of this act relating to the mints and their officers, the duties and responsibilities of such officers, and others employed therein, the oath to be taken, and the bonds and sureties to be given by them, (as far as the same may be applicable,) shall extend to the assay office hereby established, and to its officers, assistants, clerks, workmen, and others employed therein.

Salaries of officers, assistants, and employés.

SEC. 57. *And be it further enacted*, That there shall be allowed to the officers of the assay office at New York the following salaries per annum: To the superintendent, five thousand dollars; to the assayer, and melter and refiner, each three thousand five hundred dollars; and the salaries to assistants and clerks, and wages to workmen, and their manner of appointment, shall be determined and regulated as heretofore directed in regard to the mints.

Regulations.

SEC. 58. *And be it further enacted*, That the operations of melting, parting, refining, and assaying in the said office, shall be under the general directions of the Director of the Mint, in subordination to the Secretary of the Treasury; and it shall be the duty of the said Director to prescribe such regulations and to order such tests as shall be requisite to insure faithfulness, accuracy, and uniformity in the operations of the said office.

Assay offices at Denver and Boise City.

SEC. 59. *And be it further enacted*, That the business of the branch mint at Denver, which shall hereafter be conducted as an assay office, the assay office at Boise City, Idaho, and all other assay offices now established,

or hereafter to be established, shall be confined to the receipt of gold and silver bullion, melting and refining by fluxes, assay, and return to depositors of the same in bars, with the weight and fineness stamped thereon.

Officers', clerks', and workmen's salaries.

SEC. 60. *And be it further enacted*, That the officers of such assay offices, when their services are necessary, shall consist of an assayer, who shall have charge thereof, and a melter, to be appointed by the President, by and with the advice and consent of the Senate; and the assayer may employ as many clerks, workmen, and laborers, under the direction of the Secretary of the Treasury, as may be provided for by law. The salaries of said officers and clerks shall not exceed the following: To the assayer, the sum of three thousand dollars; to the melter, the sum of two thousand five hundred dollars; to the clerks, eighteen hundred dollars each; and the subordinate workmen and laborers shall receive such wages as are customary, according to their respective stations and occupations.

Oath of office. Bond and surety required.

SEC. 61. *And be it further enacted*, That the officers and clerks to be appointed at such assay offices, before entering upon the execution of their offices, shall take an oath or affirmation before some judge of the United States, or of the supreme court of said Territory, as prescribed by the act of July twenty, eighteen hundred and sixty-two, and each become bound to the United States of America, with one or more sureties, to the satisfaction of the Director of the Mint, or of one of the judges of the supreme court of the State or Territory in which the same may be located, and of the Secretary of the Treasury, with the condition of the faithful performance of the duties of their offices; and the said assayers shall discharge the duties of disbursing agents for the payment of the expenses of their respective assay offices.

General direction.

SEC. 62. *And be it further enacted*, That the general direction of the business of said assay offices of the United States shall be under the control and regulation of the Director of the Mint, subject to the approbation of the Secretary of the Treasury; and for that purpose it shall be the duty of the said Director to prescribe such regulations and to require such returns periodically and occasionally, and to establish such charges for melting, assaying, and stamping bullion, as shall appear to him to be necessary for the purpose of carrying into effect the intention of this act in establishing such assay offices.

Laws of the mint applied to assay offices.

SEC. 63. *And be it further enacted*, That all the provisions of this act for the regulation of the mints of the United States, and for the government of the officers and persons employed therein, and for the punishment of all offenses connected with the mint or coinage of the United States, shall be, and they are hereby, declared to be in full force in relation to the assay offices by this act established, as far as the same may be applicable thereto.

Penalty for making or issuing counterfeit gold or silver coin.

SEC. 64. *And be it further enacted*, That if any person or persons shall falsely make, forge, or counterfeit, or cause or procure to be falsely made, forged, or counterfeited, or willingly aid or assist in falsely making, forging, or counterfeiting, any coins, bars, ingots, or disks, in resemblance or similitude of the gold or silver coins, bars, ingots, or disks, which have been, or hereafter may be, coined or stamped at the mints and assay offices of the United States; or in resemblance or similitude of any foreign gold or silver coin which by law is, or hereafter may be, made current in the United States, or are in actual use and circulation as money within the United States; or shall pass, utter, publish, or sell, or attempt to pass, utter, publish, or sell, or bring into the United States from any foreign place, or have in his possession any such false, forged, or counterfeited coins, bars, ingots, or disks, knowing the same to be false, forged, or counterfeited, every person so offending shall be deemed guilty of felony, and shall, on conviction thereof, be punished by fine, not exceeding five thousand dollars, and by imprisonment and confinement at hard labor, not exceeding ten years, according to the aggravation of the offense.

Penalty for counterfeiting minor coinage.

SEC. 65. *And be it further enacted*, That if any person or persons shall falsely make, forge, or counterfeit, or cause or procure to be falsely made, forged, or counterfeited, or willingly aid or assist in falsely making, forging, or counterfeiting, any coin in the resemblance or similitude of any of the minor coinage which has been, or hereafter may be, coined at the mints of the United States; or shall pass, utter, publish, or sell, or bring into the United States from any foreign place, or have in his possession any such false, forged, or counterfeited coin, with intent to defraud any body, politic or corporate, or any person or persons whatsoever, every person so offending shall be deemed guilty of felony,

and shall, on conviction thereof, be punished by fine, not exceeding one thousand dollars, and by imprisonment and confinement to hard labor not exceeding three years.

Penalty for defacing or falsifying gold or silver coins of the mint, or foreign coins.

SEC. 66. *And be it further enacted*, That if any person shall fraudulently and for gain's sake, by any art, way, or means whatsoever, deface, mutilate, impair, diminish, falsify, scale, or lighten the gold or silver coins which have been, or which shall hereafter be, coined at the mints of the United States, or any foreign gold or silver coins, which are by law made current, or are in actual use and circulation as money within the United States, every person so offending shall be deemed guilty of a high misdemeanor, and shall be imprisoned not exceeding two years, and fined not exceeding two thousand dollars.

Penalty for debasing gold or silver coins, or for altering the weights used at the mint.

SEC. 67. *And be it further enacted*, That if any of the gold or silver coins which shall be struck or coined at any of the mints of the United States shall be debased, or made worse as to the proportion of fine gold or fine silver therein contained; or shall be of less weight or value than the same ought to be, pursuant to the several acts relative thereto; or if any of the weights used at any of the mints or assay offices of the United States shall be defaced, increased, or diminished through the default or connivance of any of the officers or persons who shall be employed at the said mints, with a fraudulent intent; and if any of the said officers or persons shall embezzle any of the metals which shall at any time be committed to their charge for the purpose of being coined, or any of the coins which shall be struck or coined at the said mints, or any metals, coins, or other moneys of the said mints or assay offices at any time committed to their charge, or of which they may have assumed the charge, every such officer or person who shall commit any or either of the said offenses, shall be deemed guilty of felony, and shall be imprisoned at hard labor for a term not less than one year nor more than ten years, and shall be fined in a sum not exceeding ten thousand dollars.

Act to take effect after two months. Retention of present officers, except treasurers of the mint.

SEC. 68. *And be it further enacted*, That this act shall take effect in two months from the date of its passage; at the expiration of which time the offices of the treasurer of the Mint in Philadelphia, San Francisco, and New Orleans shall be vacated, and the assistant treasurer at New York shall cease to perform the duties of treasurer of the assay office. The other officers and employés of the mints and assay offices now appointed shall continue to hold their respective offices, they having first given the necessary bonds, until further appointments may be required; the Director of the Mint at Philadelphia being styled and acting as superintendent thereof. The duties of the treasurers shall devolve, as herein provided, upon the superintendents, and said treasurers shall act only as assistant treasurers of the United States: *Provided*, That the salaries heretofore paid to the treasurers of the Mint at Philadelphia, San Francisco, and New Orleans, acting as assistant treasurers, shall hereafter be paid to them as "assistant treasurers of the United States;" and that the salary of the assistant treasurer at New York shall not be diminished by the vacation of his office as treasurer of the assay office.

Name and location of mints and assay offices.

SEC. 69. *And be it further enacted*, That the mints and assay offices authorized by this act shall be known as the Mint of the United States at Philadelphia, the mint of the United States at San Francisco, the mint of the United States at Carson; the United States assay office at New York, the United States assay office at Denver, and the United States assay office at Boise City, Idaho; and all unexpended appropriations heretofore authorized by law for the use of the Mint of the United States at Philadelphia, the branch mint of the United States in California, the branch mint of the United States at Denver, the United States assay office in New York, and the United States assay office at Boise City, Idaho, are hereby authorized to be transferred for the account and use of the institutions established and located respectively at the places designated by this act.

Authority for sale of real estate, buildings, and machinery of branch mints at New Orleans, Charlotte, and Dahlonega.

SEC. 70. *And be it further enacted*, That the Secretary of the Treasury be, and is hereby, authorized at his discretion to remove the whole or any part of the machinery, apparatus, and fixtures of the branch mints of the United States at New Orleans, Charlotte, and Dahlonega, to any other institution authorized by this act, or at his discretion to sell at public sale, all the real estate, buildings, machinery, apparatus, and fixtures belonging thereto.

Short title—repealing clause.

SEC. 71. *And be it further enacted*, That this act may be cited as the "coinage act, 1870;" and all other acts and parts of acts pertaining to the mints, assay offices, and coinage of the United States are hereby repealed.